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CIS

FISCAL DISPARITIES

HEARING

BEFORE THE

SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS UNITED STATES SENATE

NINETY-SEVENTH CONGRESS

FIRST SESSION

PART 1

FEDERAL ALLOCATION FORMULAS

MAY 13, 1981

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FISCAL DISPARITIES

WEDNESDAY, MAY 13, 1981

U.S. SENATE,
SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, D.C.

The subcommittee met at 1:30 p.m., in room 235, Russell Senate Office Building, Hon. David Durenberger (chairman of the subcommittee) presiding.

Present: Senator Durenberger.

OPENING STATEMENT OF SENATOR DURENBERGER

Senator DURENBERGER. The hearing will come to order.

Back some years ago, when I was in the Minnesota Governor's office it became quite clear to people in government in my State that the Twin Cities of Minneapolis and St. Paul were old industrial cities surrounded by suburbs that were becoming increasingly affluent. It was also apparent that if something wasn't done to prevent or compensate for the flight and deterioration of the cities' tax base, Minneapolis and St. Paul would begin to suffer the same types of difficulties we commonly associate with old industrial urban centers. We called this phenomenon fiscal disparities.

Because the State legislature was located right in St. Paul, the members could see firsthand what was happening. In response, the legislature passed the Minnesota Fiscal Disparities Law of 1971 which established an areawide tax base pool from which jurisdictions within the seven-county metropolitan area could draw resources.

Allocations are made from the areawide tax base pool to 300 jurisdictions in the area by a formula that reflects population and per capita property values. The formula works to the advantage of municipalities with increasing populations and lower-than-average property values.

This law addresses fiscal disparities in a very direct way. It provides some equalization of tax base among municipalities in the metropolitan area, reduces competition among municipalities for new commercial and industrial development, and reduces incentives to zone out residential property that may not pay its way. The accidental physical location of a key type of taxable property is no longer the sole determining factor in a jurisdiction's tax revenue.

When I arrived in Washington and began addressing national concerns, it dawned on me fairly quickly that, in at least one particular area, a fiscal disparity similar to that which I observed in Minnesota was at work on the national level. By simple good fortune, some States have within their geographic boundaries large mineral and energy deposits which give these States potentially great tax capacity. Other less energy-rich areas must increasingly endure greater tax burdens to raise the same amount of revenue. This, too, appears to me to be a fiscal disparity.

These are but two examples of the fiscal disparity phenomenon. There are others that I am sure will be addressed today. Congress has recognized these problems at least in part, and this recognization is evidenced in the great number of Federal allocation formulas that attempt to take fiscal capacity into consideration in the distribution of Federal grant dollars.

There are formulas that allocate Federal funds on the basis of population, formulas that allocate funds on the basis of need, and formulas that attempt to target the money to needs while taking fiscal capacity into consideration.

Criticism of many of the formulas has continued to mount—the critics charge that most formulas fail to achieve the intent of Congress due to data problems, conceptual problems, and a variety of other difficulties. As one example, the many formulas used to allocate Federal grant and revenue sharing dollars include a tax-effort factor intended to measure the degree to which a State or locality draws upon its own resource base to finance public services. It seems to me, and I know some of my colleagues believe, that the severance tax will soon make a mockery of the intent behind these formulas.

This hearing is the first step in a comprehensive evaluation of the system of Federal allocation formulas. Although I am greatly concerned about the effects of the severance tax on the general revenue sharing formula, this is not a hearing to deal with any specific formula or specific issue. There are presently 146 programs that allocate Federal funds through some type of formula mechanism, or if not a mechanism that can be classified explicitly as a formula, one that requires statistical data to determine allocations or eligibility. According to a recent study that we will hear about in detail a bit later, there are presently 150 domestic assistance programs in 18 departments and agencies employing a variety of statistical factors to allocate funds. Total funds obligated under these programs in fiscal year 1979 were in excess of $122 billion, or roughly one-fifth of the total Federal budget for that year.

What we want to do today is to bring as many of the formulas into focus as possible in order to begin classifying them and understanding how they actually work. More knowledge exists on these issues than many of us realize. The problem is it is fragmented and specialized. We hope to bring together witnesses who understand the issues so that Congress can fulfill its oversight responsibility in this very important area.

In an Energy Committee hearing last year, I said that the fiscal disparities issue would arise in different forms. Although allocation formulas are partially designed to alleviate fiscal disparities, they appear to actually produce and perpetuate some of these disparities in many instances. This leads me to conclude that the best place to attack fiscal disparities head on is the formulas. It won't be an easy task. It will raise difficult issues. It will be worth the effort if we can make a start today.

Senator Jim Sasser has a statement that we would like to insert in the record at this point.

[Senator Sasser's statement follows:]

OPENING STATEMENT OF SENATOR SASSER

Mr. Chairman. I am pleased to commend Senator Durenberger for his concern for the possible inequities Federal funding to the States may create. Because of current interest in consolidating Federal assistance into fewer programs, with fewer formulas and fewer formula factors, any inequity that might result from even a single factor stands to become that much more severe.

Reducing fiscal disparities is not a regional or a partisan issue. Senator Durenberger's concern for preventing Federal aid allocations from being perverted by exported taxes—such as severence taxes—is a matter of record, distinction and national interest.

I am very concerned, however, that we do not miss the broad picture here today. The diverse and complex testimony we have heard threatens to obscure the most important dangers in the Reagan administration's omnibus grant consolidation proposal: That States will become "locked into" allocations for the next four years on the basis of old statistics that do not adequately reflect current needs.

I am interested in the numerous topics that have only just been introduced today. But I am most concerned that the statistical problems that now undermine well-intentioned formulas and allocations are not exacerbated by any changes or consolidation efforts we may adopt. My concern, I believe, should be shared, not just by those States whose service needs have grown due to demographic shifts, but by all who wish to see grant consolidation undertaken in a fair and thorough manner.

Formula grant allocations for fiscal year 1981 are based on a wide variety of statistical data, including data from 1970, 1975 and 1978. I think it would be a shame if 1980 allocations for consolidated grants were to be based on data that could be as much as sixteen years old.

Also, I have some concern for the particular effects of the administration's omnibus grant consolidation proposal.

I understand that the administration is proposing to use the existing low income energy assistance program formula to allocate Federal funds for the energy and emergency assistance block grant. This formula's use of heating degree days—and heating degree days squared, at that—exponentially discriminates against those economically disadvantaged whose energy bills result from cooling, cooking, water heating or other energy expenses. The recent and deadly heatwave, affecting States from Tennessee to Texas, demonstrates the seriousness of emergency aid for other energy uses than heating. I believe that this program ought to respond to these needs as well, possibly by using a percentage of income spent on energy as a base for allocations.

On a different topic, written testimony today has reintroduced this issue of cost of living adjustments being added to Federal grant allocation formulas. The difficulties involved in finding equitable cost of living adjustments are very real. There is no adequate data; improving current data is costly; and the data we seek is not the appropriate data in the first place.

Unfortunately, cost of living data exists only for forty-odd urban areas, not for the 39,000 local recipients of Federal aid. Indeed, the enormity and cost of the task of calculating cost of living data for so many jurisdictions has discouraged both GAO and ACIR from pursuing such a study.

The relevence of cost of living data to cost of Govenment differentials is also a matter of doubt. The Bureau of Labor Statistics warns us against using its cost of living series for readjusting Federal allocations to perceived cost of Government differentials. The Consumer Price Index and all cost of living data is based on the changing costs of dissimilar fixed market baskets. This data can show variations in the rate of cost of living increases, but not any locationally comparable data of cost or purchasing power.

In sum, I would be worried if cost of living data for forty-odd jurisdictions were to guide us to equalize Federal allocations to account for cost of Government differentials in 39,000 jurisdictions.

If other methods of determining cost of Government differentials were to be undertaken, I would be concerned that the data obtained did not accept the size of the public sector of any jurisdiction or region as a standard or desirable one. In addition to the cost of Government services, the quality, size, type and efficiency of Government services varies radically from jurisdiction to jurisdiction and from region to region. Although it would simplify data compilation, I believe that ignoring these variations would, in effect, prejudice cost of Government adjustment to areas with outsized public sectors.

Thank you, Mr. Chairman, for this opportunity to express my views on fiscal disparities and Federal grant formulas. Senator Durenberger is to be commended for his initiative in this field of oversight. I look forward to seeing these investigations progress.

Senator DURENBERGER. Our first witness this afternoon is Dr. Richard Nathan. Dr. Nathan is presently a professor of public and international affairs at the Woodrow Wilson School of Government at Princeton University. He served as the Deputy Under Secretary of HEW from 1971 to 1972 and before that as Assistant Director of OMB.

Before returning to Princeton in 1979, he was a senior fellow at the Brookings Institution for 7 years where he did extensive research on general revenue sharing and other formula funded programs. If anyone understands the many difficult issues involved with Federal allocation formulas, he does.

Dr. Nathan, welcome. We look to you to set us off on the right track this afternoon.

TESTIMONY OF RICHARD P. NATHAN, WOODROW WILSON SCHOOL OF GOVERNMENT, PRINCETON UNIVERSITY

Mr. NATHAN. I am pleased to be here and I was pleased to hear your very good opening statement.

In your letter to me, you talked about unenlightening acrimonious squabbling by experts in this field. I hope we will redeem ourselves today. I think you have scheduled as witnesses a number of people who are deeply expert in just the questions that you have raised in your opening statement.

I would like to give, as I have been asked to do, an overview. In the interest of economizing on time, I am just going to read some highlights of my prepared statement and then I would like to make two particular points that I think are important to consider in relation to block grants.

Grants can have a number of purposes. They can stimulate the provision of services that the National Government favors. They can help to equalize fiscal conditions among the States and among cities. They can demonstrate new ideas. They can support State and local treasuries, the premise being that the National Government—as in the days of the 1837 Surplus Distribution Act—has resources to share. They can do all or several of these things at the same time. Their purposes, more often than not, are multiple and muddled.

Nevertheless, we need to think about grants systematically. It is the function of policy analysts, such as the people here today, to help provide a framework for doing so. Like on the cigarette pack, a word of warning is in order here: Hard as he or she may try, the analyst is always carrying some baggage in terms of the preferences and biases subsumed in the analysis.

One solution that is often advanced to balance out the values discussed in my prepared statement is to sort out governmental functions among the three levels of government in our Federal system.

Let us pick, it is suggested, functions which should be State functions—higher education, State roads, mental institutions—and those which should be local—police, fire, sanitation, streets, elementary and secondary education. Logical Federal functions, according to such schemes, are national defense, national parks, perhaps air and water pollution control. This sorting out process is a healthy and important one. Yet, in the final analysis no nice clear lines can be drawn. Ours is a dynamic political system of shared responsibility in which this sorting out is a constant one.

As for my preferences, I think it is a very good system, and that hand wringers and doom and gloom sayers who focus on mechanical, relatively unimportant and quite technical problems of Federal grants-in-aid are lost in the forest of federalism. We should be careful not to overreact to their doom and gloom diagnoses.

In fact, Mr. Chairman, I would like to point out—and this is not in my testimony—that this year, with the seven block grants pending, there may be a very important opportunity, a window to do some of the things implied in your opening remarks. If we spend all of our time talking about theoretical and academic ways of rearranging our federalism, we may lose that opportunity. So I think we should get on with the business that you have suggested of dealing with the stuff of American domestic government, which to a very great extent is grants-in-aid and their allocations.

The next section of my prepared testimony deals with the Reagan program.

I believe that the most important meaning of the Reagan budget for fiscal year 1982 is its impact on domestic policy, even more so than its impact on economic policy. The Reagan program makes domestic and social policy changes of a historic character, although packaged—and perfectly legitimately so—as economic policy. It represents the most radical shift in domestic policy since the New Deal.

The Reagan 1982 budget entails: (1) a substantial reduction in the role of the National Government in domestic public affairs; (2) an historic effort to strengthen the role of States in American federalism; (3) a dramatic scaling back of the commitment of government at all levels to the allocation of resources to meeting social needs; and (4) a commensurate shift in the relative importance of defense spending. Defense spending is projected to rise by approximately 9 percent a year in real terms over the next 5 years during which period nondefense spending is projected to decline by 15 percent, also in real terms.

I want to come back now to the subject of the allocation of grants. With a diminishing Federal role, we may decide that we want to think differently about the role of grants. I think it is arguable—in fact persuasively so—that if the Federal grants system is to have a smaller role, then its most critical purpose is equalization. This is good supply-side economics. The idea is that we can spend less if we concentrate our resources on those conditions and communities that are determined to be most in need.

In the latter period, we would have called this "targeting." Under the new regime, I think it would be politically wise to label it, the "safety net" approach to Federal grants-in-aid.

So we are back to what I consider the key conceptual point. The principal rationale for the Federal Government being involved in domestic affairs, it can be argued, is—not to deal with conditions that States and localities can deal with themselves—but to deal with problems and conditions that are national and cannot be dealt with by States and localities acting on their own. The twin values of efficiency and equity can best be achieved if we have "safety net" grant allocation systems under Federal grants, which disproportionately, and yet astutely, give recognition to the most needy people and places.

One more substantive subject. The trendy new issue in domestic policy is place-oriented policies versus people-oriented policies. Because time is short, I will say it straight out: I believe we need both. Place-oriented policies are justified on the part of the U.S. National Government in domestic affairs, because of demographic and social conditions whereby disadvantaged, unskilled, often poorly educated citizens tend to be concentrated in older and declining communities. These people do not live in a perfect market. The people left behind in Newark and St. Louis do not have mobility options to move to Phoenix, Houston, Scarsdale, or Santa Ana.

A "safety net" grants strategy says, in effect, we have to help these communities cope. We have to do this in many of the program areas in which Federal aid is given, particularly the seven block grants, not as a grand design urban policy—such a policy is politically unlikely and perhaps undesirable—but on a program-by-program basis, slogging it out on the kinds of formula allocations issues which your subcommittee is going to examine.

The basic question is political and not analytical or academic. These are political decisions. Analysts can help you, but they can't make those decisions.

Now, I would like to make the two main points that aren't in my testimony, but that I think might be helpful in the deliberations of your subcommittee.

First of all, I couldn't agree with you more that you have to divide the question into two levels. As far as allocations of block grant funds to the States are concerned, the severance tax issue is one of the important issues to be addressed that is not addressed in the way the administration apparently intends to go.

The second level is the allocation of grant funds within the State, where again the safety net issue is raised. I would like to make a general proposal of what I want to call today an idea of thresholds for the distribution of block grant funds by States to local governments.

It seems to me that a new concept that would fit with the decentralization ideas of the administration and, at the same time, fit with the efficiency and safety net ideas is to consider, for the seven block grants that have been proposed, an index of the way in which we would define local needs for this particular functional area. And then to say to the States: This is a threshold. This is an index of need which is to give guidance in terms of what we think about this functional area.

States could then suballocate and distribute Federal block grant funds in any way they so choose. If they did better than this index—with some range for error and diversity from place to place—then that would be their business. If their allocation was significantly different than a standard or a threshold which is adopted as part of these block grant bills, then what you could do is trigger some kind of a consultative process where the appropriate secretary would review, in some public way, the rationale for this difference between the threshold allocation system and the allocation system picked by the State.

What this would do is not necessarily put us in a position where the formula is written in Washington, but it would indicate a model or guidance which could be used as a benchmark for talking about and understanding the way in which we want to deal with needs and capacity differences within the States.

This kind of approach could be developed on a case-by-case basis for each of the seven block grants. It applies differently to each of them.

One of the things that needs to be done in hearings like this, it seems to me, is to develop some ideas and approaches for thinking about both the State, interstate and intrastate allocation systems that take into account the kinds of needs and capacity issues which you raise. I think we should be inventive about the ways we can work as analysts to help you devise new techniques.

A second and final point—again not in my testimony—is that when these block grant bills come before the Congress, one of the things that I have learned from my experience and that I would particularly want to mention at this hearing is the need for what I would call accountability systems in the block grants. That is, some kind of a way in which the State and local governments that receive this aid provide uniform, periodic, clear, clean and simple data that is useful for understanding how the money has been allocated and how the money has been expended.

It seems to me that that is again part of our democratic and decentralized tradition, that says, yes, we want to allow flexibility, but at the same time we want to inform the public at various levels. The Congress needs to know how these moneys are being used so that there can be a discussion as programs move forward in their implementation of the kinds of activities which are being funded and the purposes that are being attempted to be achieved.

I think that these three things are important elements of a way in which you may want to think about the new block grant legislation. Many of the witnesses today are addressing some of these matters from the testimonies I have seen. The three are: (1) The allocation to the States, where the administration in effect sort of stands aside and says let's do it the way we always did; (2) some thinking about a balanced way to introduce the safety net concept in the allocation within the States; and (3) some kind of a mechanism for accountability which, it seems to me as citizens and good managers, should be part of the way we think about this new period of moving ahead quite dramatically on changed intergovernmental fiscal aid instruments.

Thank you very much.

Senator **Durenberger**. Thank you, Dick. We apologize to the witnesses and those who have tried to plan their afternoon, I am going to have to recess the hearing for approximately 6 minutes and go to vote. I will be right back.

[Brief recess.]

Senator **Durenberger**. With repeated apologies the hearing will come to order. Rumor is we will be in session until 9 or 10 tonight, but I promise not to keep anybody that long.

Dick, let me start by, in effect, going back to my statement and asking you to just briefly define for me your own concept of fiscal disparities. I used an example of the severance tax revenues. Perhaps there are other forms of fiscal disparities that we should be aware of, and if there are I would like you to please comment on them.

Mr. **Nathan**. Thank you, Senator. We have done a lot of work in this area and I will say a couple of things.

One is that in my estimation the kinds of disparities, and let me leave the fiscal out for a moment, that we ought to be most concerned about are not regional. It isn't a matter of one region pitted against another, which it seems to me is bad politics. Analytically that is not what I see when I look at domestic conditions in the Nation.

What we see when we look at urban and domestic conditions is great disparities in the social and economic conditions of certain older and declining urban communities and rural communities—north and south and east and west—where you have the kind of problems that you indicated of the city losing population and the suburbs gaining.

I was looking at the figures for Minneapolis. From 1970 to 1980, the city lost 14.2 percent—as I am sure you know—whereas the rest of the suburbs gained 20 percent. That is, of course, typical.

So it seems to me the most important thing to think about at the community level is social and economic distress which is not regional but which is both urban and rural.

Now the reason I don't say fiscal is because, as analysts and as experts working in this field, it is almost impossible to use statistics to compare fiscal conditions across jurisdictions because they are so different in what they do and how they are funded. So at the community level, what we see is social and economic disparities in all regions. That, in my view, ought to be the special focus of the concern of overlying, particularly by the National Government.

Now, when you talk about the States, it seems to me that the issue that you have identified of severance taxes and the tremendous change in the world economic system due to increased petroleum prices is something that has a fundamental effect on the differences in the capacity of States.

Here I think we can talk about fiscal capacity. You will receive testimony today from Dr. Grasberger and Mr. Shannon about work that has been done to try and measure the fiscal capacity of States and to compare it, for purposes of thinking about allocations, to the needs and capacity differences among the States. Dr. Rafuse is also here on this issue. It is very complicated and it is just emerging. You need to get into it to understand it. My inclination is to think what you said in your statement is correct. But I, too, look forward to hearing some of the more expert testimony.

Senator **Durenberger**. With regard to the problems that you have just talked about in terms of urban and rural, and the variety of deterioration that is taking place in certain communities, is there some way or some role for the Federal Government to play—either its usual carrot-and-stick role or something else—in stimulating State legislatures to adopt State fiscal disparities legislation?

Mr. **Nathan**. Well, I guess I would go back and say the thing that I would like to focus on, which is most important currently, is the notion that you could build some new feature into the block grants which are going to be $15 or $18 billion. I use the term "threshold" but I think a better term might be "benchmark." I think that that is a good area for innovation. Once the dust settles on the budget resolutions and those block grant bills are before you, it is my hope that, with the help of experts—and we would be happy in the case of our center to provide assistance, there will be a way to develop some new concepts and new techniques as part of the block grants that introduce this "benchmark" concept which it seems then could have an important effect on State allocation formulas.

The same issues arise at the State level. There you have often complicated legal matters—court cases relating particularly to State foundation aid for education, which is the biggest money the States give to local governments. They are immensely complicated and tremendously important.

This is the stuff of domestic government. There are ideas I think you could work with that would have a good effect on getting some better understanding and more discussion at the State level.

Senator **Durenberger**. Have you taken a look at the seven block grants that have been proposed? If we used either your threshold or benchmark theory, with which of the seven might it be best to start?

Mr. **Nathan**. Yes. For the community support assistance block grant, so-called, we do have a lot of formula experience. You could use that formula experience, it seems to me, to develop some agreed-upon benchmark or standard which would be the basis for discussion between the Feds and the States about desperate needs and how they are met.

I understand that most of the funds under all of the administration's block grant proposals will go to the States, whereas originally they proposed that there be an education block grant that would go to local school districts.

In the case of school districts, we have Title I experience with a formula that, in some way, could be used as the benchmark. If the States developed a better system in terms of defining and meeting needs, that would not require discussion.

Each State could say, "Well, this is how we are organized in our State. This is the kind of data we have. These are the kinds of needs we are particularly concerned about. And this is how we have defined our needs for allocation in relation to the benchmark." Experts could define some range of difference. If it was exceeded, there would be a process of consultation. Depending on how people think about it, approval and disapproval power would be given to someone, perhaps a Cabinet Secretary.

The same applies to the employment and training program and to the social services programs. In all of those cases we have developed schemes for meeting local needs through direct allocating or passthroughs.

In fact, the most dramatic change in our Federal system in the last 10 years has been in this area—namely, the tremendous growth of direct Federal grants to local governments. If you put the Federal grants to welfare off to one side, more than half of all nonwelfare grants in 1980 went to local governments. Now we propose to move away from that. I believe that States have a central role in defining local governmental duties and overseeing local government boundaries, functions, and finances. But I do think that there ought to be some middle ground. There ought to be some creative thinking about a way to give the States an opportunity to try it their way, and, at the same time, to give them a standard to look at in assessing how they deal with the kinds of disparities which you have been asking about.

I think this can apply—to answer your question in a summary way—to education, community development, employment, social services, and health. For the latter—health—you have more relatively small grants that are being put together. The proposed authority level is a billion and a half. I think you could apply it there, too, but I'm not as familiar with that bill in detail.

In each case, you could develop a way of thinking about how we want to, in the aggregate, look at differences in capacity and need and have the States consider these matters.

Senator **Durenberger**. We are going to have a hearing next week on the community development block grant matters. If you would have the time to prepare comments expanding on your suggestion which would relate to that, we would be happy to make it a part of that record without requiring you to be here.

I have about a dozen more questions I would like to ask you. If I may, I am going to give them to you in writing and ask you to expand on some of these things so we can make them part of this record.

I want to thank you very much for taking the time to prepare for today and for your patience in this hearing. Thank you very much.

Mr. **Nathan**. Thank you.

[Mr. Nathan's prepared statement and responses to written questions from Senator Durenberger follow:]

Prepared Statement of Richard P. Nathan

HISTORY AND CONCEPTS FOR FEDERAL GRANTS-IN-AID ALLOCATIONS

The allocation of federal grants-in-aid is a dull subject; it can be made a little more interesting if it is pointed out that the history of federal grants is really the story of the development of the role of the American national government in the field of domestic affairs. I would like in this testimony to capsulize this history and discuss some major underlying concepts relating to the allocation of federal grants-in-aid.

A capsule history

Domestic affairs was not an important area for national policy making in the early years of nationhood. Nevertheless, federal grants-in-aid go all the way back to the pre-Constitution period, specifically the provision of land grants to the States.

The business of grants in a form even approaching what we know today did not really get started until the twentieth century, the early 1900's when funds were provided to the State for agricultural research and extension.

The big spurt in grant making came with the New Deal when the federal government recognized new areas of social responsibility in which it would play a role. Because of the desire to preserve the essential nature of American federalism, grants-in-aid became the major instrument of the national government's role in domestic policy.

Truman continued in the New Deal tradition, adding grants that went directly to local governments, an important departure from past practice whereby almost all federal grants had gone to the States.

Eisenhower ratified the grants-in-aid approach to domestic affairs. Indeed, Eisenhower toyed with ideas of basic changes in the grants system, but never pressed them. The grants system rolled along. Eisenhower, in fact, expanded it dramatically in one area with his successful sponsorship of major new federal-aid highway legislation.

The next big leap was Lyndon Johnson's Great Society program, which introduced Medicaid (now the biggest federal grant). Johnson also inaugurated a series of major categorical aids for social and urban purposes.

Nixon was also a ratifier. Although he changed the form of many grants, federal aid spending grew from 2.2 percent of GNP in 1969 to 3.4 percent of GNP in 1973. Nixon's New Federalism shifted to a decentralization mode. It featured broad-gauged and less conditional grants—revenue sharing and block grants.

Jimmy Carter upped the ante and added a few new categorical programs, namely for youth programs and the Urban Development Action Grant program, which was an afterthought that worked out amazingly well in practice. His biggest domestic policy initiative by far, however, was the economic stimulus program of 1977—a $17.5 billion injection of new grants-in-aid funds, most of which were in the form of Nixon-type broad-gauged grants. The peak year for grants was 1978 when they were equal to 32 percent of all State-local revenue from their own sources and 3.8 percent of GNP. Carter tried to slow the grants machine down after 1978, but had only modest success in doing so.

This brings us up to the incumbent. He has obviously succeeded where Carter failed. He proposes to reduce federal grants-in-aid spending from Carter's originally proposed total of $99.8 billion to $86.4 billion in fiscal year 1982, more than a 20 percent cut in real terms from Carter's proposed level and a 17.1 real cut from 1981. (See table 1.) Reagan is making these cuts at the same time that he is extending the concept of decentralization, especially favored by Republicans, as embodied in his requests for additional block grants. This raises an interesting point. In the seventies, in order to enact a block grant, it was thought necessary to provide extra funds in the form of a "sweetener." Ironically, the block grant device, which was a means for increasing spending in the seventies, is seen as a method for cutting spending in the eighties!

Conceptual issues

This is a quick historical survey. Let me turn now to some of the important conceptual issues for the grants system, focusing on the allocation of federal aid to States and localities.

Grants can have a number of purposes. They can stimulate the provision of services that the national government favors. They can help to equalize fiscal conditions among the States and among cities. They can demonstrate new ideas. They can support States and local treasuries, the premise being that the national government (as in the days of the 1837 Surplus Distribution Act) has resources to share. They can do all or several of these things at the same time. Their purposes, more often than not, are multiple and muddled.

Nevertheless, we need to think about grants systematically. It is the function of policy analysts to help provide a framework for doing so. Like on the cigarette pack, a word of warning is in order here: Hard as he or she may try, the analyst is always carrying some baggage in terms of the values and biases subsumed in the analysis.

TABLE 1—*Percent change in real Federal aid to State and local governments, 1960–82*

5-year period annual average:	
1960–65	7.1
1965–70	12.3
1970–75	8.6
Annual:	
1975–76	11.1
1976–77	8.6
1977–78	5.9
1978–79	−1.6
1979–80	1.3
1980–81 (estimated)	−5.0
1981–82 (estimated)	−17.2

Source: Data from U.S. Office of Management and Budget, adjusted by State and local government deflator.

Why a Federal role?

Why should the federal government be involved in domestic affairs? As suggested above, a number of answers are possible. Certain regions may not be able to afford minimal services that we want to provide to every citizen. This is often given, for example, as the justification for a national government responsibility in the field of welfare policy.

There is the related subject of spillovers. Some problems spill over local governmental boundaries, thus making it more logical that higher levels of government should be responsible for dealing with them.

At the same time that these and the other rationales exist for providing federal aid, there is the strong and deeply held American political tradition of local democracy.

One solution that is often advanced to balance out these values is to sort out governmental functions among the three levels of government in our federal system. Let us pick, it is suggested, functions which should be State functions (higher education, State roads, mental institutions) and those which should be local (police, fire, sanitation, streets, elementary and secondary education). Logical federal functions, according to such schemes, are national defense, national parks, perhaps air and water pollution control. This sorting out process is a healthy and important one. Yet, in the final analysis no nice clear lines can be drawn. Ours is a dynamic political system of shared responsibility in which this sorting out process is a constant one.

As for my biases, I think it is a very good system, and that hand wringers who focus on mechanical, relatively unimportant and quite technical problems of federal grants-in-aid are lost in the forest of federalism. We should be careful not to overreact to their doom and gloom diagnoses.[1]

The Reagan program

Where are we today?

I submit that the most important meaning of the Reagan budget for fiscal year 1982 is its impact on domestic policy, even more so than its impact on economic policy. The Reagan program makes domestic and social policy changes of an historic character, although packaged (and perfectly legitmately so) as economic policy. It represents the most radical shift in domestic policy since the New Deal. The Reagan 1982 budget entails: (1) a substantial reduction in the role of the national government in domestic public affairs; (2) a dramatic scaling back of the commitment of government at all levels to the allocation of resources to meeting social needs; and (3) a commensurate shift in the relative importance of defense spending. Defense spending is projected to rise by approximately 9 percent a year in real terms over the next five years during which period non-defense spending is projected to decline by 15 percent, also in real terms.

A safety net grants strategy

I want to come back now to the subject of the allocation of grants. With a diminishing federal role, we may decide that we want to think differently about the role of grants. I think it is arguable—in fact persuasively so—that if the federal grants system is to have a smaller role, then its most critical purpose is equalization. This is good supply-side economics. The idea is that we can spend less if we concentrate our resources on those conditions and communities that are determined to be most in need.

In the Carter period, we would have called this "targeting." Under the new regime, I think it would be politically wise to label it, the "safety net" approach to federal grants-in-aid.[2]

I recognize as well as anyone that this is an easy issue to talk about and an incredibly difficult issue to work on. In the age of computers, we now have "print-out politics" for grants-in-aid. When I first came to Washington as a Senate aide, if a grant formula was changed, only a handful of gnarled back room experts knew what the result would be. Today, every time a vote is taken in the Congress, or for that matter in a State legislature, every member demands to have a printout on his desk showing how much each town, county, city, or school district receives in relation to every other eligible jurisdiction. The result is that under and after Nixon's New Federalism we have witnessed a spreading of federal grants rather than a targeting effect.

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[1] For a fuller development of this point, see Richard P. Nathan, "'Reforming' the Federal Grants-in-Aid System for States and Localities," National Tax Association, May 18, 1981.

[2] I am indebted to my Brookings colleague, Paul R. Dommel, who, to the best of my knowledge, first used the term this way.

So we are back to what I consider the key conceptual point. The principal rationale for the federal government being involved in domestic affairs, it can be argued, is—not to deal with conditions that States and localities can deal with themselves—but to deal with problems and conditions that are national and cannot be dealt with by States and localities acting on their own. The values of efficiency and equity can best be achieved if we have "safety net" grant allocation systems under federal grants, which disproportionately (and yet astutely) give recognition to the most needy people and places.

One more subject. The trendy new issue in domestic policy is place-oriented policies versus people-oriented policies. Because time is short, I will say it straight out: I believe we need both. Place-oriented policies are justified on the part of the U.S. national government because of demographic and social conditions whereby disadvantaged, unskilled, often poorly educated citizens tend to be concentrated in older and declining communities. These people do not live in a perfect market. The people left behind in Newark and St. Louis do not have mobility options to move to Phoenix, Houston, Scarsdale, or Santa Ana. A "safety net" grants strategy says, in effect, we have to help these communities cope. We have to do this in many of the program areas in which federal aid is given, not as a grand design urban policy (such a policy is politically unlikely and perhaps undesirable), but on a program-by-program basis, slogging it out on the kinds of formula allocations issues which your Subcommittee is going to examine.

The art of formula writing

Such allocational issues are dull going as I said at the outset. But it is the stuff of domestic governance. The role of the analyst is a tricky one. In this testimony, I have presented some of my own views on grants-in-aid issues. As a formula expert, I believe my role is to help policy makers understand the consequences of certain kinds of formula issues and options important to the program at hand. There is no one right formula to do anything. Formula writing is an art, not a science. We have, in a number of reports and papers we have written, defined the elements of formula decision making—eligibility, distribution, and indexing. We have also discussed some of the ways in which different techniques can be used to change the allocational effects of particular grants-in-aid formulas and to write new formulas. We have, in addition, reviewed the problems that are created as a result of the weaknesses of some data sets and the lack of timely, accurate, and detailed statistics in other areas. I hope that the effort in this testimony to put these kinds of subjects in an historical and analytical context will be helpful to your Subcommittee.

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RICHARD P. NATHAN
*Professor of Public
and International
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June 10, 1981

Senator Dave Durenberger
Chairman, Subcommittee on
Intergovernmental Relations
Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510

Dear Dave:

Enclosed are my answers to your questions sent by letter of May 20. I particularly call your attention to the answer to the last question. I agree with your comments on the hearing and believe that some of the points in the answer to the last question may help deal with the all-too familiar problem you mentioned in your letter of "time limitations." I stand ready to help in any way that I can.

Sincerely,

Richard P. Nathan

RPN:jsg
encl.

Replies from Richard P. Nathan

1. Let me first ask you about fiscal disparities. I notice the term does not appear in your testimony, and yet you stress the notion of equalization. How would you define fiscal disparities? What is there to be equalized?

As I indicated at the hearing, the basic problems with using fiscal disparities as an equalization on benchmark are technical. I am uneasy as to whether we have adequate statistics from a national source to do this, given the great variation in state, local, and state-local fiscal systems. There are such great differences, particularly, in the functions, accounting systems, fiscal years, revenue sources, etc. among local governments (both between and within states) that it is very difficult to develop useful indices of fiscal condition. Some research in this area has been very misleading.

2. You are suggesting that in order to meet the disparities among state and local governments' ability to produce necessary public services for themselves the federal government should have equalization as a goal. But, isn't there an alternative way to accomplish this? What I will call structural solutions, rather than permitting energy rich states to raise windfall receipts on severances taxes and then attempting to turn around and reshuffle federal dollars in some equalization scheme, why not have Congress exercise its authority under the commerce clause to prevent these windfall tax receipts in the first place?

My view is that the implication of your question is correct. But I am not satisfied that we have examined the severance tax issue as fully as we should. I think your hearing will have helped in this respect. What I think we need is a balanced committee of experts -- economists and policy analysts -- who would define the issues in this field. The tendency is for the debate to be more ideological than analytical. I suggest that you request the National Academy of Sciences to establish a panel on this subject.

3. A second structural solution could also be used to address the fiscal imbalance between central cities and their suburbs. The Congress could, for example, encourage (by use of the appropriate sticks and carrots) state legislatures to adopt fiscal disparities legislation that would remove the structural barriers to central cities' ability to tap the true tax wealth of the metropolitan area. Could you comment on this?

I am enough of a decentralist or federalist (call it what you will) to be very uneasy about Congressional incursions into matters affecting the structure of local government. I would rather see the national government's role focus on the fiscal -- or equalization -- dimension. Once the thicket of governmental structure, if it is genuinely and seriously pursuing this subject, the national government is bound to come up against some of the toughest and most fundamental issues of domestic governance -- namely, those involving boundaries. There is much to be said for plans like the Minneapolis-St. Paul tax sharing plan, but I don't think it is an area in which federal intervention -- carrot or stick -- is the right answer.

4. So, there are at least two alternative approaches to remedying fiscal disparities: What I have called the structural approach and the equalization approach you are suggesting. They are obviously not mutually exclusive.

Right. I think the federal role, for many reasons having to do with the structure of our political system and the realities of the political process, has to concentrate on equalization as opposed to what you have termed the "structural" role. But I would not necessarily consider the severance tax issue to be a structural one. By structural, I think of what I regard as a lot of bad proposals for elaborate sub-state planning entities, wall-to-wall regional commissions, Title V commisions, etc. These are either toothless (as a condition of being created) or, if they are real, get the national government into that thicket of state and local political boundaries and structure. I once wrote an article calling this approach the "New Structuralism" and saying it is not the right approach for the federal government. See: Richard P. Nathan, "The New Federalism Versus The Emerging New Structuralism," Publius (Summer 1975), pp. 111-129. Excerpts from this article follow:

> "Just as President Nixon's New Federalism was beginning to take hold, a new theory of domestic affairs emerged on the scene, referred to in this paper as the 'New Structuralism.' It calls for action by the federal government to 'reform' the structure of state and local governments in order to 'improve' their capacity, presumably to take advantage of revenue sharing funds and other similarly broadened federal grants-in-aid. This new theory of domestic affairs is beginning to pick up themes and theorists on a basis which suggests that major issues of the future will be cast in terms of the New Federalism versus the New Structuralism. What do these two theories involve? ...
>
> "Despite the fact that the Nixon Administration shied away from structural intervention by the federal government, others have not. There is growing evidence that the basic question of American domestic governence will shift from functional intervention by the federal government of the Great Society genre to structural intervention. Increasingly, there is in the literature a view which says, 'Yes, the federal government should decategorize, but if we are going to do this, we need to be sure that state and local governments have the organizational and structural capacity to respond to this challenge' ...

> "Advocates of the New Structuralism differ on the way in which, and the degree to which, the federal government should determine what is a 'proper' structure for state and local governments. But fundamentally what is involved is the use of federal power to bring about preferred organizational arrangements of local governments, especially in metropolitan areas. The most explicit and fully-developed version of this position is that taken in voluminous reports on substate regionalism by the Advisory Commission on Intergovernmental Relations. In the first report in this series (October 1973), the ACIR presented a broad set of proposals. It urged that all geographic areas establish what the Commission referred to as 'Umbrella Multi-Jurisdictional Organizations' (UMJOs), based on councils of government and/or substate districts. ...
>
> "As the New Structuralism emerges, and to the extent it seeks to apply national approaches to the great variation in the organizational patterns and arrangements of American state and local government, it runs the serious risk of becoming, in point of fact, a kind of procrustean federalism. Procrustes, a bandit of Greek mythology, sought to design the perfect bed. To do so, he forced people to lie in beds which often did not fit them. For those who were too long, he sawed off their feet; those who were too small were stretched on the rack. A New Structuralism could be equally painful. ...
>
> "If the real aim of the New Structuralists is to aid poverty-impacted central cities more adequately and equalize conditions between these units and their suburbs (as I think it is), the better and more direct way to achieve this purpose may well be through changes in the distribution of fiscal subventions and transfer payments. This involves both income-support (welfare) programs and the formulas for general and special revenue sharing, as well as other federal grants. Having the federal government intervene in the thicket of governmental structure may turn out to be much less effective when looked at in relation to the diversity of our federalism and the well being of our tradition of local self-government."

5. Let's return to the issue of equalization. Assume for a moment that all problems are best addressed by those jurisdictions closest to the problem. We know that is not the case in areas like income redistribution, but for the sake of argument, make the assumption. Then, in those areas where the federal government has a legitimate role, such, as, say, ensuring the environment is protected, what is the precise nature of that role? Is it simply to shuffle dollars around so as to equalize, while leaving the operational solution of the problem to the states and localities?

No. If we believe that there is a national interest -- such as the spillover rationale -- that requires national policy making in a given area such as the environment, then the federal government should face up to the costs involved. It should pay all or part of those costs. This is the now familiar "mandates" issue. I think there is now such a strong reaction to some unfunded mandates legislation that we are not going to see this kind of sloppy policy making done as much in the future.

6. If the government is to be involved, at least in part, in a dollar shuffling scheme to equalize, formulas are likely to play a prominent role. What is your feeling about the ability of the present allocation formulas, taken as a whole, to equalize?

They do a better job than is often believed, but, according to my personal view, not good enough. As I stressed in my prepared testimony, the principle involved here can be defined as a conservative one, efficiency. The national government, in the exercise of what it determines is its proper role, can do more for less, if it focuses on those places and cases of greatest need.

7. What is your feeling about the use of per capita income as a measure of fiscal capacity?

It is only one dimension of need. There are others -- economic indicators, like the loss of population and jobs, social indicators like dependency and density, indicators of physical need. Income alone is not a sufficient measure of need. Your question focuses on fiscal need, and here I would refer to the testimony of Shannon, Grassberger and others to the effect that the use of a representative tax system is an important idea to pursue. But, basically, I am skeptical of equalization schemes that focus on fiscal need, for the reasons given in the answer to question No. 1. I think that economic and social need are -- realistically -- the better basis for equalization policies by the national government. This may not be intellectually and analytically the most appealing approach, but realistically I think it is the best one.

8. What about the representative tax system approach devised by ACIR? Should it replace the use of per capita income?

I like this idea. I'd say yes. It would help a lot, and is a sensible way to get at the severance tax issue raised by your second question.

9. What about our ability to measure need, both conceptually and statistically? Has Congress been successful in adopting the best measures presently available, or is there a gap between what is possible and what we actually do in our present formulas?

Formula decisions, as I said in my prepared testimony, are in essence and at their roots political. Analysts can help to frame the decisions. But politicians have to make them. I think some good decisions have been made, as under the CDBG and UDAG programs, and under ARFA and LPW. But I also think there are index studies that can guide and improve the ability of political decision makers to take need into account in the allocation of grant funds. See, for example, Richard P. Nathan and Paul R. Dommel, "Issues and Techniques for Federal Grant-in-aid Allocations to Distressed Cities," *Urban Affairs Papers*, forthcoming.

10. Formulas are frequently criticized on the grounds that they fail to realize the original intent of Congress. If I understand you correctly, you are saying that the intent of Congress to stimulate, support, and demonstrate has been realized only too well. In fact, part of the problem we are facing today is that we have stimulated, demonstrated, and supported ourselves into a fiscal hole.

Great. There are several rationales. What I am saying, and the question captures the point exactly, is that the equalization rationale should be given greater importance.

11. You are suggesting that the time has come to turn our attention from stimulating, supporting, and demonstrating to equalization. Could you define what exactly you mean by equalization?

It is my view that historically the problems of declining, older industrial areas with concentrations of the people left behind (often members of minority groups who lack mobility options) is the essential domestic challenge in the United States. This is much less true in other Western nations. We talk about the drug crisis, the job crisis, the slum crisis, the school crisis, etc. What we really face is the coming together of these conditions in certain communities -- both urban and rural and North and South. These conditions are sufficiently localized that we could accomplish a lot and spend less if we move in the direction of equalization. I would call it -- in this new period politically -- a "safety net" strategy for communities. It's by no means easy to do in this era, as many people say, where the pie is getting smaller; it is harder to give bigger slices to anybody. But, I think we need to be alert to opportunities, to be innovative, not to give up. I want to stress that this is a personal view. The mood of the moment is one in which all of the attention is on budget cuts. But attitudes change. There are ways to move towards equalization. For example, revenue sharing is a favored Republican program. It comes up for renewal soon. It may be possible, when it does, to consider a "small" and focused supplement to deal with the special and deeper needs of distressed communities. That way, one could say every government is getting something (i.e. the continuation of its revenue sharing). And yet at the same time we are moving towards a safety net or efficiency program that operates on a decentralized basis. This is one approach. There are others. The basic condition is going to be with us, I regret to say, for quite a long while. I would favor a Friedmanesque (or McGill Commission) approach if I felt that we had a perfect market, or something approaching it, where people could move as easily as Visa cards. But that's not the reality.

12. It doesn't appear to me that this is at all what the administration has in mind. Their argument is simply that federal intrusion has gotten way out of hand, and that what we need to do is eliminate much of it. The block grant consolidation is their vehicle for making those cuts. Do you detect that the administration is sympathetic to your notion that equalization should be the new name of the intergovernmental game? Have you spoken to anyone at the White House regarding these ideas?

The asnwer to the first part is no. But academic freedom is a nice condition, and it should be taken advantage of. I believe we should promote discussion of these ideas. I favor them, although I try very hard to draw a line between my research on the effects of federal grants and my personal views on the kinds of domestic needs we face as a nation and the way we should deal with them. I frequently visit older and distressed and declining urban areas. I am often reminded of a remark by a graduate student at Princeton from Bangladesh who visited newark and asked, "How can America give foreign aid when it faces problems like this?" Newark is, of course, a case of deep distress. Still, the point is well taken. We are in a period of retrenchment and a turning away from social and urban needs. We have sort of given up. But one can be grateful in such a period for the fact that ours is a very dynamic political system. Ideas and attitudes change.

You asked if I have talked to people in the White House about these issues. I have talked to a number of OMB officials, less to White House officials.

13. You are saying that the equalization approach to federal grants is good supply-side economics. How do you react to the charge that far from being good supply-side economics, your proposal is a justification for the system we have presently - that your proposal interjects the federal government into the business of redistributing income on an unprecidented level?

By supply-side economics, I have in mind the notion that increasing efficiency and productivity are key values. I think policies that help distressed communities to cope with change, help them increase their tax base, and help them upgrade the skills of their labor force have this effect. Despite many statements to the contrary, some programs work. I believe we have made progress. We should build on programs like UDAG, supported work (a national demonstration program run by the Manpower Demonstration and Research Corporation), Job Corps, many vocational rehabilitation programs, model schools, whatever. There is a little bit of good in everything. The good thing about austerity is that it forces government officials to be more concerned about what works -- about management, about the capability of governmental institutions. They've had it a little too easy in the past.

14. Would you comment on a series of studies conducted at the Brookings Institution and Princeton University on the effects of federal grants suggesting that the most fiscally distressed jurisdictions will be hardest hit by proposed federal aid reductions?

As I said in my testimony, this is a clear, strong finding of our research; dependency is a function of the condition of a jurisdiction. The more distressed it is, the more dependent it will be on federal grants - and state grants for that matter - to keep basic services going. If federal aid is cut, these governments will suffer the most.

15. Doesn't this make it imperative that any sweeping changes such as block-granting large new portions of the grant system be accompanied by well thoughtout funding mechanisms to take these findings into account?

Yes.

16. In short, if the administration proposes to cut federal grants by simple proportionate cuts that lock in the status quo, there will be a greater than proportionate adverse effect on particular types of jurisdictions, while other types of jurisdiction will suffer less than proportionate adverse effects?

True. And yet the ingenuity of the species should be up to the challenge. If we wanted to, I think, as I said at the hearing May 13, we could devise ways -- through a "benchmarks" system, for example -- to encourage states, in dealing with the new austerity, to take these kinds of conditions and factors into account.

We really don't know what will happen as a result of the 1982 budget revisions and the new block grants, to the extent they are enacted. Some states may take a strong leadership role. There may be efforts to prune services and to pick and choose on the basis of efficacy and need. Governmental institutions may get leaner and stronger. These, obviously, are optimistic speculations. But the point is that our diverse and pluralistic political system of federalism is much too complex for people to make quick generalizations, especially from a Washington base, about the effects of so fundamental a policy shift as the Reagan budget revisions for fiscal 1982.

17. At the conclusion of this hearing we will be writing a report to the full Governmental Affairs Committee. Part of that report will be recommendations to the Congress regarding formula construction. What advice would you like to give Congress in this regard. Specifically, how do you suggest we overcome "print-out-politics" and bring coherence to the system of federal allocation formulas?

Formulas are the stuff of domestic government at the national level. I suggest that your committee request clear, short, focused reports on emerging formula issues from good sources, like the Congressional Research Service, and publicize them. I think hearings have to be pretty general, because, as your May 13 hearing demonstrated, the subject matter can quickly get into the formula bog of high complexity. You have to try to deal with general issues and themes at hearings and in debates. But then there has to be a ready reference shelf of current brief, factual, readable reports on each formula issue that you want to get involved in. CRS does a good job on these kinds of issues. The Senate Finance Committee blue books are a good model of background information that is well summarized and presented. The GAO might help. CBO could too. In short, there are lots of analysts on the Hill now. I think you could tap this resource for a series of background papers in some easily referenced and identified form -- like the Senate Financed Committee blue books -- that would "educate" people in on these policy issues. Information is power.

Senator **Durenberger**. Our next witness is Mr. Edwin Harper, Deputy Director of OMB. Mr. Harper will explain for us the funding mechanisms that the administration has proposed for the block grant consolidations.

Mr. Harper, thank you very much for being here today.

TESTIMONY OF EDWIN L. HARPER, DEPUTY DIRECTOR, OMB

Mr. **Harper**. Mr. Chairman, it is a pleasure to be here today. If I may, I will summarize my remarks and submit the written testimony for the record.

Senator **Durenberger**. Your full statement will be made part of the record.

Mr. **Harper**. I will summarize if I may.

The subject of formulas, I think, starts as kind of a dull subject and turns into a fairly interesting one the more you get into it. The more rocks you turn over in the formula area, the more problems you find especially as we look at some 500 factors used in the existing formulas in various grant programs. And I think we have seen some failures in some of these programs for a number of different reasons.

One of them is the timeliness of the data. I think that a number of Americans were shocked, as I was, when recently they saw on "60 Minutes" that Orange County, Fla., was declared a depressed area. When they looked into it, they found part of the problem was that the data was 10 years old. Likewise, recently I was asking some of our fellows—experts as a matter of fact—about the age of some data in a fairly prominent program. It was only probably 2 or 3 years old. We dug further back in the Department and found, in many cases, the most recent data was over 6 years old. So the timeliness of the data is certainly a very important problem.

Another is data accuracy. In many cases we find that various agencies, working with different objectives, have defined things slightly differently and edited their computer tapes in slightly different fashions. What may seem to be a category "A" for one piece of data may not be what appears to be that same category "A" in another. So we do have inconsistent definitions that can produce some erroneous results.

Also, I think, sometimes, there is a problem between the executive and legislative branches in making sure that we really understand each other with respect to what is the specific purpose or objective that we are trying to achieve. Sometimes there is a lack of clear legislative intent with respect to precisely what is supposed to be done, especially when it comes down to the details of formulas. That is why I applaud these hearings because I think they do focus a spotlight on something that deserves attention at both ends of the avenue.

There are a couple of specific examples that I think illustrate the point. One is the Local Public Works Capital Development Act, the LPW. For a combination of reasons—inaccurate data, arbitrary agency assignment of weights to various factors, the lack of agency expertise to test the formula performance in this $2 billion program—Seattle and Pittsburgh, cities that are certainly typical of many other American cities, somehow got left out of the program because of the nature of the formulas.

A second example would be the 1980 supplemental energy allowance program. Here the formula didn't take into account the differences in the ways States administer the program.

One of the factors put into the formula was the "SSI" caseloads. In other words, it made a difference as to whether or not you administered the program yourself if you were a State, or if you simply had the Federal Government administer it. And here the State of Connecticut administered its own program and Massachusetts used the federally administered program. One State did much better than the other, not for any reason of objective need but simply because of the administrative differences between the two States.

Now, I would like to turn specifically to the block grants. They are an important cornerstone in the administration's commitment to change the Federal role and to reduce Federal spending and still maintain the present service levels without really hurting the recipients of the programs.

Why block grants? First of all, because they reduce the costs, and I think these are real costs of Federal prescriptiveness. In other words, we have the Federal Government telling State and local governments what their priorities should be. There is also the factor of overhead costs. We can reduce costs in many grant programs by consolidating them into a single block grant program.

In addition to the block grants allowing greater flexibility at State levels, they also allow limited funds to be stretched further and to be focused more specifically on the real needs of the State and local governments.

Depending on how you count, we have six or seven block grants. We are presenting six at this time, which consolidate some 83 different programs. The block grants—just so we are all counting from the same list—are health services, preventive health services, social services, and two education grants, which are contained in one bill. Just to clarify one point which Mr. Nathan made, in title I of the education block grant it provides that 87 percent of the funds allocated to the State under title I would be passsed through to the local education agencies. In title II the funds on education resources are focused specifically at the State level. That gives us five so far. The sixth would be the energy and emergency assistance block grant. Those are the six new block grants. This administration is also proposing changes to the community development block grant program and it is sometimes called the seventh block grant. I will not discuss it today, but will focus on the six new block grants.

All of the six are characterized by simplified requirements, an adherence to an intended use report, a report on the activities conducted under the grants, audit requirements, and civil rights requirements.

I think these block grant programs need to be viewed in the context of the President's entire economic recovery program. Here we need to move immediately. We need to move to cut out excessive and unnecessary overhead costs which we feel are inherent in categorical programs versus block grant programs.

We think that this massive reduction which we can see in Federal prescriptiveness must accompany the budget cuts so that we can insure that we are not just transferring regulations from one pocket to another, but that, in fact, we are allowing the States and localities to use those funds to the highest and best use according to State and local priority.

The allocation approach, which is the specific focus of the hearing this afternoon, is designed basically to target the funds at the State level. The proposals, in general, are for the States' funding to be in proportion to their fiscal 1981 shares of the programs being consolidated. I think that there is an important and very fundamental thing to keep in focus as we look at this. We have, in the past, created some block grant programs, but in the past we were operating in a very different set of circumstances.

We were operating in a set of circumstances wherein we could, (1) hold all of the participants harmless, and (2) we could change the allocation factors to a new set of factors and thereby change the allocation for the future. Now, that is possible to do when you have increasing resources allocated to programs, but when you have either a static or declining absolute dollar amount involving programs, you can't do both.

Thus, the basic approach that we have taken is to hold harmless the State and local government entities participating in the program, and to establish the pro rata shares of the fiscal 1981 program. This allows for simplicity. It allows for predictability on the part of State and local governments. They know what they got this year and they know what they will get in the future. I think it avoids any potential delays from lengthy discussions of trying to come up with new allocation formulas. This brings us back to the formula issues. Even if we came up with new formulas, there are some fundamental problems with formulas that we have discovered in the timeliness and accuracy of the data—not to mention the technical problem of expressing legislative intent properly and identifying the formula factors and the appropriate weighing for each factor.

We should not be, I think, locked into this particular allocation approach for all time. I think, as we gain experience with the new block grant programs, and can have an opportunity to examine the new census data which will be coming in over the next year or so, we can think again about appropriate allocation formulas. But I think to delay, at this time, further consideration of the block grant programs would be an error.

One other point that I would like to make is that in any allocation formula there is concern about equity. We have looked at the equity in terms of holding harmless the present recipients. We have also studied the potential regional disparities of the impact of the President's overall economic program.

What we have found is that the economic recovery program is regionally neutral. There is not more than 3.6 percent variation in the national per capita average when we were able to examine over 80 percent of the programs involved in the budget reduction. The national average was about $166 per capita. The regional variations were from $158 in the Midwest to $170 in the South and the Northeast.

This is a very complicated area. We are delighted to have the opportunity to work with you and this subcommittee. We pledge our efforts to work jointly on what, I think, will have to be a long range endeavor to come up with better allocation formulas than those which we are proposing in the block grants today.

Senator DURENBERGER. Thank you very much for your testimony.

Let me ask you first about the decision to use 1981 percentages to allocate funds under the new block grants. As I have looked at the six or seven block grants, it seems to me that half of them have some explicit or implicit formula by which the amounts that go to each State are determined. The other three, principally I think the health and social services block grants, don't have that kind of formula. It has bothered me that either some States might have done very well in one year like 1981 based on their grantsmanship ability, or some of them have been putting forth quite an effort to control costs and shifting resources, and so forth.

I am wondering to what degree have you looked at alternatives to a 1981 base? In particular, have you the capacity to look at a 3 or 5 year running average? Or do you think it is appropriate to do that given the nature of the six or seven specific blocks that have been proposed?

Mr. HARPER. If I could comment in several pieces on your question. First, we do have some difficulties in looking backward and trying to come up with average allocation formulas. One of which is simply a data problem in that our current data is not necessarily timely or accurate in all cases. In addition, as we look backward, we also have the problem of programs changing their nature and fundamental functions over periods of time. Thus, it is a question of having a program today and it is the son of what program and the grandson of what program as we keep going back in time. So, we do have that kind of a problem.

Second, we get back to making this fundamental choice between changing allocation formulas and holding harmless. Our proposal is that the more important factor is the hold harmless aspect of it.

I think that we are given some confidence that that is probably the right approach when you have cited the basic formula for three of the programs and then raised a question about the three remaining programs.

With respect to those three programs, we find that all of the very large programs—over $200 million a year—which are being consolidated, are basically formula-driven programs with two exceptions. Those are the community health and community mental health center programs. About 72 percent of the total funding for the health services, preventive health services and social services block grant programs are formula based. In some ways, in fact, we say that these might even be better formulas than some of the formulas used in the other programs because they are primarily population based. This tends to be a relatively stable formula factor at the State level.

In the health services block grant, about 35 percent of the funding is formula driven. In the preventive health services block grant, about 11 percent is formula driven. However, all of the programs in that block grant have 1981 current services funding under $200 million, and 9 of the 10 programs have levels of $40 million or less. So we are aggregating a number of very small pieces.

All four of the block grant programs in the health and human services area are programs for which we have proposed a 4-year authorization. It may be that at the end of the 4 years, or perhaps even before that time, we will have a better approach, but it seems to be an appropriate approach right now.

In the social services block grant, which I haven't commented on previously, over 90 percent of the money is formula driven. Thus, overall, we have come to the conclusion and recommendation that the fiscal 1981 pro rata shares are an appropriate way to go because they do hold harmless and they are reasonably formula driven.

Senator **Durenberger**. Let me just deal with the social services block grants for a minute. When we marked up the Senate Finance Committee's reconciliation response, I think we did a logical job of slightly altering some of the recommendations on health and social services. We recommended the 25-percent reduction in title V once we were able to pull maternal and child health out of the block. Then we added some other related things. I think our greatest problem came with title 20 and the social services. We just could not find the administration's theory of low overhead, or reduction of high overhead, or any kind of a justification—at least there were a lot of people who couldn't find a justification—for a 25-percent reduction. Those problems have been relatively level-funded for the 10 years that most social services have been in existence. There were a few mandates or requirements that were lifted but several were left behind.

My concern comes as I look at that in terms of the policy direction in the whole blocking process which State governments are going to see. My State legislature will finish its work on Saturday of this week. They will leave in complete disarray, and they will assume that they will have to come back in October or November to address some of the problems that we will create for them.

It is difficult for me to chart for them a State and local government role in social services when I can't justify the kind of reduction that is contemplated in that particular block grant. What they will say to me, of course, is that they have already been just barely meeting needs at the same level they have been at for 10 years. Now we want to cut 25 percent. This, in effect, is going to force out only the most desperate of needs in this program and leave them with the option of using a combination of State and local resources.

My question to you, basically, then is to what degree can we take the blocking process, particularly in health and social services, as an indication of the administration's approach to formula funding in the future?

Mr. **Harper**. Well, it is true that the social services title 20 represents something closer to a block grant than many of the other programs that are being consolidated. But, on the other hand, the social services title 20 represents only about 60 percent of the funding in the social services block grant consolidation that is proposed here.

In addition it constitutes only a third of the number of grant programs that are involved. Thus the streamline overhead attributable to the social services program represents only a third of what the other two-thirds still remain to be streamlined. So I think any particular level of funding is debatable. The fundamentals that there are overhead reductions which can be realized is applicable to the social services block grant as well as the other programs.

Senator **Durenberger**. Let me ask you a more general question about block grants as an instrument. I think Dr. Nathan indicated that we ought to be looking at these block formulas as windows, I think he called it, through which we could deal with something he called the stuff of American Government.

During his campaign the President also dealt with this federalism issue by saying the Federal Government will devolve significant functions to State and local governments. That we already know. But he also added after that the following words "And the resources to pay for those functions." So my question to you is do you think that the block grant is the principal mechanism by which this administration is going to fulfill the promise of providing additional resources, or are there other elements in the administration's program to do that?

Mr. **Harper**. I think the answer is multifaceted. First, along with the evolution of the responsibilities for these particular programs, there also is funding, direct Federal funding, attached to these programs. It is not a situation where the Federal Government is suddenly saying, "All right, the States are now responsible for social services. Good luck. You are on your own." But that instead there are Federal funds available to continue to support these programs.

I think another important factor is that the President's total economic program calls for a lessening of the percentage of gross national product which is absorbed by the Federal Government. In other words, the taxpayer is left with a little more money in his/her pocket. I think this offers an opportunity for States and for local governments to face some of the tough decisions themselves and for their citizens to decide whether or not they want to tax themselves to take on some of these responsibilities. So, in effect, there is room being cleared out by the Federal Government reducing its taxes in the next 4 years.

There is direct Federal funding that goes with the programs as well as a reduction in the Federal tax burden on the total tax take from citizens.

Senator **Durenberger**. But there is, as of yet, no use of the formula to recognize fiscal disparities or tax efforts, or anything else. In other words going back to my title 20 example and your response to the title 20 example, the Federal role in meeting needs is declining and there are no replacement revenues.

A lot of these social services are heaviest in States with the least fiscal capacity. And you do not see, in the short term, the allocation formula being used in any particular way to provide additional resources to the States, do you?

Mr. **Harper**. Well, in the sense of additional resources being allocated to State and local governments, and especially local governments, we have the general revenue sharing program. That is a specific transference of federally collected tax dollars to local governments, and that is a specific add-on of resources.

Otherwise, the block grant programs themselves are not designed to be a general revenue sharing source, or a gross transfer of funds from the Federal Government to State and local governments.

I think that there are programs outside of the block grant programs that we are looking at today which may provide the opportunity again for the Federal Government to step back from taxes in particular areas and thus transfer not only a specific responsibility but a specific field of taxation previously taxed that would be made available to State and local governments.

Senator DURENBERGER. Then the answer basically is that, to fulfill the promise of additional resources, we really have to look to changes in the Federal Tax Code.

Mr. HARPER. I think that is certainly an important aspect of it, additional resources beyond what we have right here. I think in every instance we have to do perhaps as we have not done before. That is, instead of looking at a narrow categorical grant, a narrow categorical interest, we have to broaden our perspective and understand where each one of these individual decisions is taking us, and, in fact, has taken us over the last decade, to a decade of tremendous budget deficits. These deficits are a result of the necessity to fund these programs essentially by printing money. We have created a very difficult economic situation in this country. Where we have unheralded inflation, we have high deficits and high unemployment. Thus, the resources I think we need to realize, in all instances, come from only one place. In the end, it is the individual taxpayer who comes up with every single dollar the Federal Government, State governments, or local governments are spending.

Senator DURENBERGER. That sounds like one of my speeches, but that provides very little confidence to people at the State government level in terms of what direction, or what role, the Federal Government is going to play in financing human services in the future. A couple months ago I would have bought the theory you just enunciated—that resources to pay for them will come with tax cuts and control of inflation. Now, I believe, it will have to come from controlling inflation and not much of it is going to come from tax cuts; because every day that goes by it would appear that we are coming closer and closer to balancing the budget without the kinds of major tax cuts, or even major tax reforms, that the President was enunciating.

I come from a State that would be better off if this Federal Government never got into the categorical grant business; because by the time we have gotten down here and persuaded Congressmen that there ought to be a national program, we have already satisfied our needs from State and local sources. Then we go after the carrot that is provided for those who haven't done what we have done.

But my problem, or our problem in my State and, I think, a lot of other States, is coming because of the substantial disparity in the resources that are available to us. So, I guess what I am driving at in these questions is whether or not you, and OMB in particular, see the allocation formula—whether it is this year or next year—directed more toward the problems of fiscal disparities between the States than just what the Federal role ought to be in meeting the needs of adopted children, foster parents, the aged, the blind, and the disabled. Or, is it your answer that we are doing the best that we can with what we have on the grant side? "You are going to have to get your resources when we get around to passing a tax cut bill."

Mr. **Harper**. Well, if I may, I think there are three issues involved here. One is the issue of need. Pick any particular objective and how would you define the problem in that particular State, number of people, or student days, or health needs, or whatever. That is one problem. The second problem is the financial resources within the State. Those two are not necessarily linked. And a third is the tax effort of the State.

I mean, for example, your State makes an extraordinarily large tax effort to, in effect, meet the desires of the people of the State of Minnesota itself. Other States make a lesser tax effort. Tax efforts and financial resources are also not mechanically linked in some way.

So, in one sense, what we have right with that is the demonstration of the fact that we have needs, we have resources and we have tax effort, none of which are inextricably linked. In some States, such as the State of Minnesota, they have the taxing will, have the resources and have the needs and they meet them. Another State may have the need, may not have the resources and may or may not have the will. So, I am not sure that, in one formula at the Federal level, we can tie up all three activities. In fact, these were some of the questions that we addressed some years ago when we were trying to figure out the formulas to the general revenue sharing program, and in the end gave up. Basically, we gave up on the tax effort issue and went a little more to the population issue.

Senator **Durenberger**. Would it be fair to summarize this discussion by saying that, as of yet, we haven't seen any new theory of federalism? We have seen some evolution; but, is it fair to say that, just looking at the 6 or 7 blocks and the way they are being proposed, this is not yet this administration's concept of the interrelationships between Federal, State, and local governments?

Mr. **Harper**. I think it is the beginning of an expression of that, and I think there are some fundamental tenents that ought to be recognized—and are recognized—in the specific proposals. I think one of them is that the Federal Government ought not try to administer everything itself. That, in fact, the States are probably much better at administering a number of things and are probably more sensitive to the specific needs and desires of their citizens.

I think that, beyond those issues, the Federal Government itself should not be the prime determiner of what the State and local governments do with their funds—either directly through categorical grants or through the regulatory process, which is not the focus of this hearing. But, indeed, I think it points up the interrelatedness of all of the aspects of what the administration is trying to do. We start back with the fundamentals that the success of our country in meeting the needs of all of its citizens—especially the poor and disadvantaged—depends much less on any particular Federal program, or set of Federal programs, than on the health of our economy. I think we can look back at the income and employment level in absolute terms and in relative terms of the disadvantage and the minorities in periods of the 1960's, and compare that with the 1970's. It is an interesting test case. In the 1960's we had a fairly strong robust economy—at least compared to the 1970's—with relatively few Federal programs, by today's standards, penuriously funded; and yet minorities and disadvantaged did much better in the prior period than they did in the 1970's, primarily because of the health of our economy.

That has got to be our first priority, and everybody gains by that. I think it is essential to effect tax reform programs that build a strong economy, and then lift the wet blanket of over-regulation by the Federal Government which has dropped on virtually every institution in this country—including State and local governments. Those are the kind of things that are going to make the most fundamental differences. I think those begin to sketch out a philosophy and approach to federalism that this administration has.

Senator **Durenberger**. Can we expect more of the grant programs to be blocked or consolidated in next year's recommendation?

Mr. **Harper**. I can't speak for next year. We are just beginning our spring preview sessions right now. But I think I would agree with my good and esteemed friend, Dr. Nathan, that probably not every categorical grant program should end up in a block grant program. But I haven't yet figured out which ones should and which ones shouldn't.

Senator **Durenberger**. So does that mean then that the formula is not relevant at all to the new federalism? The whole discussion of formulas is irrelevant?

Mr. **Harper**. Well, no, I think the formula issue is an important issue now. Does it translate by itself immediately into an issue of federalism? I think it only does so as a piece of the block grant program, and it's an aspect of that. I don't think there is a formula that is inherently a better federalism formula than another formula.

I think one aspect that I neglected to emphasize earlier in the concept of federalism in this administration is the emphasis on general purpose units of government and also the emphasis on State governments. As Dr. Nathan properly pointed out, basically all the block grants are focused on State governments with various passthrough dimensions for local agencies.

Senator **Durenberger**. I am sure Dick Nathan would agree with you that it is probably not our job at this level to tell either individuals, or general State and local government jurisdictions, exactly how to meet needs. However, he made some statement relative to an obligation we have, as a nation, to see that needs are met. I think that gets us back to your perception of the role of Federal financing by formula in seeing that those needs can best be met by general government—whether at the State or local level; and whether it is your intention to recommend that the formula be used, in some way, to see that needs are met—not in a Federal way or a federally dictated way, but in a way where the resources are there from some source, so that needs can adequately be met. That is what I meant when I asked is the formula irrelevant to federalism or is it an important part of federalism, as you view it, in terms of prescribing formulas for the appropriation of Federal moneys.

Mr. **Harper**. Well, I think that one of the manifestations of this concept that we often see is that "OK, let's have a block grant program, but let's require a maintenance of effort for this objective, or for that objective, or for some other objective." And, I think if we are talking about requiring maintenance of effort, in effect, we are back to categorical grant."

I think that, in that sense, the formulas and the accouterments of the formulas that go with them—ceilings and other constraints—are contrary to the concept of federalism that is being put forward here in the block grant programs. Indeed, we should more often leave it up to the State and local governments. As the President has pointed out, we do have a commitment to make sure that needs are met. There are some needs that are going to be met at the Federal level and are appropriately met there.

For example, regarding the social security system and some of the other programs that the President has defined as a part of the Federal social safety net, our proposal is not to desolve those programs or, in some way, loosen or eliminate that commitment. That commitment exists and it is a very strong commitment of this administration.

Senator **Durenberger**. Thank you very much for coming up this afternoon. I think we made some progress. At least, I want you to be sure and tell the President that I, for one, think the new federalism needs some greater definition and that I think the formula associated with block grants ought to play some role in that definition.

Thank you very much.

[Mr. Harper's prepared statement follows:]

STATEMENT BY EDWIN L. HARPER
DEPUTY DIRECTOR, OFFICE OF MANAGMENT AND BUDGET
BEFORE THE SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS
COMMITTEE ON GOVERNMENTAL AFFAIRS
MAY 13, 1981

Mr. Chairman, we believe that one of the most confusing and frustrating aspects of the domestic assistance system involves the use of statistical formulas in allocating funds to states and localities and, also, in determining recipient eligibility for program participation. These formulas involve nearly 500 factors, many of questionable accuracy; a bewildering array of mathematical calculations—addition, multiplication, squaring applied without rationale—which all too frequently produce unsatisfactory results that enhance an image of poor public administration. There are several reasons for this (situation) — proliferation of assistance programs; lack of timeliness and accuracy in the data; absence of program rationale and documentation for formula calculations; and lack of agency ability to predict formula outcomes overtime. I will address each of these failures and present two examples of how the system has gone awry.

First—timeliness—many of the statistics currently in use in federal formulas are ten years old, and do not reflect current conditions. Twenty formulas were using 1970 population counts in 1979, when more recent estimates were available. Thirty-two programs were using 1970 income and poverty statistics in 1979. This situation penalizes and frustrates communities that are experiencing rapid change by offering a promise that cannot be delivered. In Santa Ana, for example, the complex mix of deterioration and growth is not addressed by UDAG's rigid and out-of-data eligibility criteria. The cost, Mr. Chairman, of producing timely statistics in conformity with diverse program objectives is prohibitive.

To turn to the question of accuracy, an issue which is underscored by numerous court cases surrounding the 1980 census, we are indeed fortunate that the accuracy of other statistics used in allocations has not been similarly challenged. Administrative data, such as client characteristics and program inventories, were instrumental in the allocation of $28 billion in fiscal year 1979. Inconsistent definitions and procedures for recording information (such as coding recipient characteristics, assigning correct geographic codes, and procedures used in producing tabulations), may all be a source of error. Finally, many agencies edit, combine, and extrapolate data published by federal statistical agencies before calculating allocations. These modifications are not subjected to tests for accuracy.

To turn from the question of accuracy to that of meeting legislative intent, let us examine two points—the question of statutory vs agency responsibility for establishing formulas and the question of agency documentation of those formulas. Statutory requirements range from the very specific—mandating factors, source, update and computation procedures—to very general provisions allowing considerable discretion in formula design. In most cases, a combination of statutory and administrative requirements are employed, a confusing situation which compounds problems in the oversight process.

Unfortunately, the overall quality of formula documentation is also poor, although a few agencies do publish clear descriptions of the procedures they use to compute assistance payments. In general, however, agencies themselves are uncertain of the primary source of data used when calculating allocations. Finally, it would be extremely difficult, if not impossible, to deduce formula equations and calculate assistance payments from agency published material because, simply, the agencies have not documented every step in formula calculations. The sequence of these calculations, the presence of discretionary and mandatory set-asides, obscure hold-harmless and transition provisions, recalculations, and treatment of special recipients, all affect the formula outcome.

Now, Mr. Chairman, I would like to describe two examples of failed formulas.

The Local Public Works Capital Development Act of 1976 (P.L. 94-369) authorized the expenditure of $2 billion to provide employment opportunities in areas of high unemployment through the construction or rehabilitation of public facilities. The Department of Commerce used a computerized formula and a ceiling on the amount of funds going to any one city or county within a state to allocate LPW funds. Because the formula's performance was so erratic—Pittsburgh and Seattle received no funding, while hundreds of thousands of dollars went to several small towns—Congress demanded an explanation from the Department of Commerce. The Department's report concluded that there was no way to be sure that funds were targeted according to legislative intent. None of the formula factors, including those given the most weight—number of unemployed and labor intensity—explained the difference between funded and unfunded projects. This illogical result was exacerbated by the imposition of state fund ceilings which further limited the formula's ability to target funds according to legislative intent. This is one example of a formula that did not perform as intended or expected. The reasons for this failure, so clear in the LPW example, are common: (1) use of inaccurate data (unemployment figures), (2) arbitrary agency assignment of weights and computations to certain aspects of the formula, and (3) lack of agency expertise to test and evaluate formula performance.

These failures have been often repeated. Another example is the 1980 Supplemental Energy Allowance program (P.L. 96-126), which is the predecessor of the low income energy assistance program consolidated in our proposed Energy and Emergency Assistance block grant. Although the SEA formula is no longer in use, it illustrates significant problems. For example, because of their geographic proximity, the large differences in payments between $144 and $250 to beneficiaries in Massachusetts and Connecticut received under SEA respectively, drew considerable attention to that formula.

Now, what went wrong? A fairly typical formula was used to determine the amount of funds to be received by each state—and the primary factors were heating/cooling degree days, numbers of persons at or below 125% of the poverty rate, and increases in home fuel costs. A third major factor—the number of SSI caseloads—was used to calculate individual payments.

Let me show you, however, what goes wrong under programs and formulas that do not take into account the differences in the way states design and administer programs. Because Connecticut administered its own SSI program, its eligible population—that is, people receiving SSI or a federally administered state supplemental—was substantially less than Massachusetts because Massachusetts does not administer its own program. As a result, Massachusetts had to divide its share among 6 times as many people as in Connecticut. This example underscores the intergovernmental complexities that cannot be statistically treated in a formula—formulas involve much more than mathematical approximations of a perceived reality.

Now let me turn to the subject of the Administration's block grant proposals, and the way in which we propose to allocate those funds.

Before I get into the actual details of the block grants, let me share with you one fact: the President considers these block grants to be a cornerstone in his commitment to refocus and to change the role of the federal government in our federal system.

At the same time, this approach will enable the President to accomplish the overriding purpose of the Economic Recovery Program—to achieve economic stability, and control inflation by, in part, slowing the rate of growth in federal spending. These changes are designed to reduce federal prescriptiveness, and to rely more on the constitutional partnership of state and local governments to target our collective resources more effectively in the accomplishment of agreed-upon national goals.

In summary, the Administration feels that block grants are a way to reduce federal spending without jeopardizing needed services to all of our citizens.
Now, what are we proposing? We have sent to Congress six block grants in five pieces of legislation which consolidate 83 programs. These consolidations of narrow categorical programs combine functionally related programs which are aimed at similar objectives. Two are in the area of health—the Health Services block grant, which consolidates 15 programs at a proposed FY 82 funding level of $1.14B, and the Preventive Health Services block grant, which covers 10 programs to be funded at $241.9M. In the area of social services, we have proposed to consolidate three Title XX programs and nine other social services programs into a general Social Services block grant, for which $3.8B is being requested in FY 82. The Energy and Emergency Assistance block grant consolidates two programs: the Low Income Energy Assistance program and the AFDC emergency assistance program, with proposed FY 82 funding of $1.4B. Under the two Education block grants which we have proposed in one piece of legislation, Title I, the Special Educational Needs block grant, a significant portion of which is passed through the states to local education agencies, consolidates 11 programs and is requested to be funded at $3.7B in FY 82. Title II, the Improvement of School Resources and Performance block grant, combines 33 programs into one block grant with proposed FY 82 funding of $565M.

In designing each of these block grants, our goal has been clear: At the same time we allow the goals and purposes of each consolidated program to be carried out, we are massively reducing federal requirements and regulations. There are really only five basic requirements in these block grants. First, the purposes of these block grants (which are the same as the purposes of the programs consolidated) are enumerated and authorized. States must spend block grant funds only for these purposes. Second, states are required to develop yearly plans for the use of these funds in a way that facilitates public comment. These plans do not have to be submitted to or approved by the federal government. Third, states must put together a report on activities conducted under the block grant, at least once every two years, again, with the stipulation that copies of this report are made public within the state. Fourth, the states are required to have their expenditures under the block grants audited at least once every two years. Audits are to be done in accordance with generally accepted auditing standards. Finally, grantees must comply with civil rights provisions preventing discrimination on the basis of sex, race, national origin, handicap, or age.

The block grant designs must be viewed in the context of the total budget. To accomplish the goals of the Economic Recovery Program, it was clear that an immediate reduction in the growth of federal assistance was essential. In order for the states to ensure that these reductions could occur without causing reductions in service levels, we quickly realized that massive reductions in program prescriptiveness and administrative requirements had to accompany the budget cuts. Our block grant proposals are designed to satisfy this objective. Once the block grants mentioned above were designed, it was essential that we devise a simple, workable means to allocate funds rapidly.

The approach that we felt would be most efficient and cause least disruption in the intergovernmental system would be for each state to receive funding in proportion to their FY 81 shares of funds for the programs being consolidated. The total funding authorized for each block grant is set at approximately 75% of the FY 81 current services levels for the programs being consolidated. We examined alternative means for allocating funds, each of which had disadvantages which caused us to reject them. Let me give you an example of one such case

We looked at alternative state funding allocations for the Energy and Emergency Assistance block grant, but found that data which might have been used in funding allocations would not be available until December 1982. Had we proposed such changes, we would have effectively asked Congress to delay a sorely needed program or vote on a formula change without knowing its effects.

However, Mr. Chairman, let me assure you that the Administration is not locked into these allocation procedures for the long term. As we and the other members of the intergovernmental community gain experience in working together in this new way, and new and better data becom available, we will continue to examine alternative ways of distributing the block grant funds. When these programs come up for reauthorization, we would expect to include proposals for different allocation of these funds as required.

I would like to address one additional point in our proposal for selection of FY 81 current services level as the basis for distribution. As I have noted before and want to stress again, the most recent year's experience gives the states the most predictable basis for their program and budget planning efforts. In addition, FY 81 was a year in which federal, state, and local budgets received a great deal of scrutiny; thus, the programs operating in FY 81 should have generally been determined by all levels of government to be those most needed.

Let me say one additional thing regarding the block grant proposals in the context of this entire budget package the Administration submitted in March. We feel that the overall package of budget reductions and program changes, whether submitted through our block grant proposals or in any other programmatic packaging arrangement, has been developed in a way that has no deliberate regional bias. In this regard, we recently completed a study which describes the regional impact of the President's Economic Recovery

Program. The spending cuts that can be allocated geographically (about 80% of the total) amount to $166 per capita for the nation as a whole in 1982. The regional variation ranges from a low of $158 in the Midwest to a high of $170 in the South and Northeast, meaning that no region is more than 3.6% above or below the average.

In summary, the Administration applauds your efforts to examine the fundamental analytical basis upon which federal aid funds are distributed. We share the Subcommittee's basic concern with this important policy matter. We recognize the importance of this subject to state/local governments, and, as such, pledge to work with you to refine the methods and data bases which exist today. You can rest assured, Mr. Chairman, that the Office of Management and Budget will do its part in this long-range endeavor to make the federal aid system work more effectively for the citizens of our country.

Senator **Durenberger**. We now turn to our first panel to get an overview of the present state of the system of allocation formulas. We have two witnesses for this section of the hearing, Mr. Friedrich Grasberger, Associate Director of the Center for Governmental Research. The Center has been awarded a National Science Foundation grant to evaluate the distributional and equalization effects of Federal grants-in-aid formulas, and to improve formula performances. Mr. Grasberger is here today to inform us of the conclusions of this study.

Also present is Dr. John Shannon, Assistant Director of the Advisory Commission on Intergovernmental Relations. We are always pleased to see John here. I understand he also has the results of a new ACIR study to share with us, and, of course, to add his usual insight into these difficult questions. So, gentlemen, if you would step up.

I am informed that we have this room until 4 o'clock, which may minimize the questions, and I don't want to limit your comments in any way—either of you gentlemen. So take the time you feel that you need to go through and highlight the studies. I will minimize my end of it with regard both to this panel and the next panel so that we will meet the terms of our lease.

Mr. Grasberger, would you like to go first?

TESTIMONY OF FRIEDRICH J. GRASBERGER, ASSOCIATE DIRECTOR, CENTER FOR GOVERNMENTAL RESEARCH; AND JOHN SHANNON, ASSISTANT DIRECTOR, ADVISORY COMMISSION ON INTERGOVERNMENTAL RELATIONS

Mr. **Grasberger**. I would like to introduce, my associate, Jeffrey Smith, who was the coinvestigator on the study that I am going to summarize in my remarks.

This research project, sponsored by the National Science Foundation, came about in response to two major developments:

One, the Federal general revenue sharing debate, and

Two, the frostbelt-sunbelt controversy.

Both of these developments raised issues with respect to grants-in-aid formula fairness and effectiveness in accomplishing grant objectives. The focus of our research was on how well or how badly Federal grants equalize among States.

In order to find answers to the question of the extent of Federal equalization efforts, we had to establish some standards regarding the nature of the intended equalization. We found no sets of rules, principles or techniques which were used with any sort of consistency in the construction of equalization formulas. It appears that where equalization was an objective, the distribution formula had to meet only one basic criterion, that of allocating grants in some inverse relationship to the perceived ability to pay the recipient jurisdictions. The various grants-in-aid formulas exhibited different types of inverse mathematical relationships to States' per capita personal income—the standard measure of fiscal capacity—with an absence of any rationale why formulas of similar grant programs should have differing mathematical properties.

Our approach to measuring the equalization effects of grants-in-aid formulas was derived from the ACIR definition of what constitutes equalization. ACIR defines "equalization" as an aid process designed to compensate for differences in the imbalance between individual governmental jurisdictions' program needs and their relative financial abilities to support these functions at the desired level. We looked at a number of Federal programs, assumed a "desired level" of support for the aided functions and measured to what extent Federal aid equalized—that is, made more uniform—the residual State-local effort required to finance these functions.

To explain further, if a desired level or minimum level of spending per need unit is assumed to be $100, we measured the tax effort necessary for each State to raise such amount and termed this "preaid tax effort." We then calculated the Federal aid amount available for a $100 per need unit cost level for each State and subsequently calculated the postaid tax effort figures by subtracting Federal aid from the $100 per need unit total. Perfect equalization under this system would occur when the Federal aid formula yields amounts which permit the funding of aided services at uniform dollars per need unit levels and uniform State-local tax effort levels in all States.

In 1975, the reference year of our study, ACIR identified 147 formula-based Federal grants-in-aid programs to State and local governments which accounted for 80 percent of all aid funds. We developed a typology of these programs which classified the various programs by formula type, formula elements and a variety of other criteria. Approximately 40 of these programs, distributing an estimated $30 billion in fiscal year 1975, were deemed to have equalization objectives. Of these, four programs—AFDC, medicaid, GRS and vocational education, distributing $18 billion—were selected for detailed analysis. This analysis included an evaluation of each formula element in terms of up-to-dateness, appropriateness to measure need, appropriateness to measure ability-to-pay, the appropriateness of the formula algorithms, and the effects of existing formula constraints—that is, minimum and maximum allocations.

Our survey of formulas with equalization objectives uncovered a great variety of such formulas which happen to fall into four general classes, each with its own distinct mathematical properties. Please see exhibit A attached to our prepared statement. We found no evidence that formula architects had a clear idea as to exactly why certain mathematical formulations were selected—that is, why per capita income was squared—other than that prototypes of such formulas already existed and that they were satisfied with the resultant distributional patterns.

Our survey further uncovered a great variety of versions of individual formula elements. The 147 categorical grants-in-aid programs utilize 188 distinct elements, including 11 versions of income measures.

Even if the mathematical formulations had been part of a systematic approach and the definitions of formula elements acceptable, formula architects frequently would weaken or even counteract the intended formula objectives by establishing formula limitations and constraints. Chief among the general findings were the inadequacies of the formula elements themselves.

Equalization-type aid formulas were expected to be responsive to need and to meet such needs inversely to a State's ability to pay. We found that formula elements descriptive of need were often inadequate or lacking entirely. Frequently, population was used as a need proxy without regard to the fact that States with equal populations may have substantially different concentrations of the population subgroups whose needs are to be met by a given program.

The serious weaknesses of formula elements intended to reflect needs are compounded by the fact that none of the formulas recognizes the existence of substantial variations among the States in the costs of providing a given public service. We estimate that, in 1975, cost-of-government indexes per unit of service ranged from 84 in Mississippi to 158 in Alaska.

The most common measure of fiscal capacity, per capita income, has been widely criticized for its inability to reflect a jurisdiction's ability-to-pay, primarily because it fails to include tax bases whose taxes are exported and borne by the residents of other States. Our analytical work confirmed the superiority of the concept of the "Representative Revenue System" measure pioneered by ACIR and currently being refined and made available on a virtually current basis by the same organization.

To compound all these shortcomings even further, the formula elements are not only often poorly chosen but are also sadly out of date when applied. To illustrate, per capita incomes utilized in the AFDC formulas applicable to 1975 outlays represent the mean of the 1969, 1970, 1971 figures, in effect creating a 5-year lag. New York State saw its per capita income decline from a level of 20 percent above the U.S. average to 11 percent above over this timespan.

Among more specific findings of our study, the utilization of the previously mentioned equalization measurement method permitted the evaluation of existing and alternative formulas in terms of their overall effectiveness to achieve equalization of tax effort and in terms of the contributions of individual formula characteristics and elements to such effectiveness.

I have been notified that 5 minutes have expired. I was under the impression I had 10 minutes.

Senator **Durenberger**. Go right ahead.

Mr. **Grasberger**. I am going to make it as brief as possible. The specific findings I would like to enumerate, first, is that the present formulas in all instances worsen tax effort equality. All of the present aid formulas analyzed show a greater relative dispersion of postaid than of preaid effort to fund expenditures of identical purchasing power per need unit in each State.

Second, alternative formulas increase equalization. As individual formula elements are updated, corrected or improved along the guidelines which we developed in our study, we found a lessening of these postaid dispersions.

Third, best formulas achieve significant improvements. The best formulas are those that have been formulated in a capacity equalizing fashion and are far superior to existing formulas which only contain upgradings of the quality of individual formula elements.

Fourth, alternative formulas' impact was slight in general and significant in some States. In attachment B we show what individual improvement of formula elements and an improvement in the formula algorithm would do to the distribution of vocational education aid to the States. In most instances the impacts are small, but in some cases the impacts run to double figures.

Fifth, there is an aid shift toward higher income States if the formula improvements, as suggested, were to be implemented. This is the most startling finding and seems to be counterintuitive. This is due to two factors: (A) nominal income is not necessarily a good indicator of the economic well-being of the State. As Mr. Shannon will surely point out, the per capita income can be best improved by a representative tax system index. And (B) it is frequently in the high per capita income States that we find disproportionately high numbers of need units which produce low capacity need ratios.

To conclude, the findings of our study point in a number of obvious directions. First of all, the Congress needs to gain a clear understanding of what exactly is intended by a grant with an equalization objective, of what is meant by fiscal disparities, and of what it is that is to be made more equal. Second, formula algorithms and formula elements must be selected so as to insure that the intended equalization is achieved to the maximum degree possible. We believe that our work, and that of several researchers involved in the GRS formula research effort, forms an adequate basis for the development of a systematic approach to equalization, and that the critical formula elements correctly and equitably measuring fiscal capacity and need are either available or can be made available.

Senator DURENBERGER. Thank you very much, Doctor. John, would you like to go ahead?

Mr. SHANNON. Yes, Mr. Chairman, I would like to introduce my associate, Robert Lucke. Bob has had a key role in our current study measuring the tax wealth of the 50 State-local systems.

Our statement deals with fiscal capacity—designing a yardstick for measuring the ability to pay, or the revenue generating power of the 50 State-local systems. The staff is currently working on a study of State-local fiscal capacity and will be presenting its report later this year.

As part of this effort, the staff has reexamined the representative tax system as an alternative to the per capita income yardstick for measuring the ability of governments to finance their services.

This representative tax yardstick—a rather complicated way of testing the real revenue generating power of a State—defines the "tax capacity" of a State and its local governments as to the total amount of revenue that they could raise relative to all other States if identical tax rates were applied to a wide variety of common tax bases. That is the key, to apply identical tax rates to all of the major tax sources that each State has at its disposal. Whether or not a State actually uses a tax is not at issue. For example, Florida does not impose a personal income tax, but under our calculation we credit Florida with certain income tax raising power by applying a uniform rate against its income base.

Our preliminary findings are consistent with our earlier studies that Fritz Grasberger has mentioned. The per capita income measure now used in Federal aid formulas understates the revenue generating power of the mineral-rich jurisdictions. The per capita income measure also overstates the tax capacity of jurisdictions with relatively high percentage income but relatively small property, sales or mineral tax bases—example, New York, Massachusetts, and Connecticut.

The inadequacies of the conventional per capita income measure of fiscal capacity are illustrated by comparing the differences between the one now used in Federal aid—the per capita approach—and the tax capacity yardstick. In our prepared statement we set out the most dramatic examples—the mineral-rich States of Wyoming, Alaska, Nevada, Montana, New Mexico, and Texas. Their ability to generate revenue is substantially understated when judged by the per capita income of their residents. By the same token, New York, Rhode Island, and Massachusetts have their abilities overstated by using the per capita income approach in the Federal aid system.

Three recent developments reenforce the need to reconsider the use of the per capita aid programs. First, the differences between per capita income and tax capacity are likely to rise in the near future because of energy price decontrol and the continued strength of OPEC. As long as OPEC stays healthy, this problem is going to confront the Congress.

Second, the shift from categorical grants to block grants is likely to generate a demand for more fiscal equalization. This is true even though, at present, the administration is willing to initially allocate their new block grants in proportion to past entitlements. In time, block grants may have to be given a much stronger equalization to justify their continued existence.

And third, the funding reductions and the caps that are now being placed on Federal aid programs will increase the demand to allocate the remaining Federal aid to the jurisdictions with greatest need.

Now there are some substantial technical and political considerations that will slow down any quick effort to replace the conventional per capita income measure with the more sophisticated tax capacity estimates produced by our representative tax system approach. In my statement I list the technical. Due to time constraints, I would like to bear down on the political.

The replacement of the traditional per capita income measure with the tax capacity estimates is bound to be highly controversial. Why? Because it is going to create a new set of winners and losers—especially in the AFDC and medicaid programs—who rely heavily on tax capacity to determine matching ratios.

For example, if the 1979 tax capacity estimates had been used instead of the crude per capita income measure, New York's matching ratio for these two welfare programs—AFDC and medicaid—would have dropped from 50 percent to 33 percent, thereby reducing New York's State and local welfare outlays by over $1 million in 1980.

The State by State matching rate changes are set forth in tables 3 and 4 appended to our prepared statement.

In summary, while the tax capacity estimates enjoy a theoretical and measurements advantage over the conventional per capita income measure, these estimates face an uphill battle when tested for political acceptability.

Mr. Chairman, this concludes our statement.

Senator DURENBERGER. Thank you both very much.

Let me ask a question about how we can factor in—if we can factor in—the capacity of a State to raise revenues from natural resources—whether you take energy minerals or any other kind of mineral—like iron ore in my State, or wheat, or timber, or any of the other things that have been talked about in the first battle of this argument in which we are engaged. Is it impossible to look at capacity? Or are we left, as I was in the bill that I introduced on coal severance taxes, with just trying our best to reduce, or put a cap or limit on, the State's capacity to limit taxation of certain minerals?

Mr. SHANNON. Let me respond especially to that last part of your observation, that of putting a lid on State taxation of mineral resources. As you know, Senator Durenberger, the commission has asked the staff to look into the whole question of the Federal regulation of State taxation of mineral wealth. I think if you spend 20 years in research it would be hard to pick a more controversial issue than this one. For almost 200 years we have been following a hands-off policy at the Federal level with respect to State taxation of mineral resources. So any effort on the part of the Congress to come right in and slap lids on Wyoming, or Montana or Texas would represent such a radical departure from our traditional constitutional relationships that it is bound to generate some real soul searching.

An alternative, of course, is to take a milder approach and say that we are not going to put handcuffs on these States but, at least, we will take a more sophisticated view of their ability to generate revenue and somehow or other build that factor into the Federal aid so that the States without the mineral wealth are differentiated in the Federal aid allocations from those that have that wealth. That, of course, is an alternative approach which has been suggested in the Congress.

In our own approach we do factor in the value of mineral production and apply an overall average severance tax rate to the value of that mineral production. We thereby bring severance taxation into the calculation of State tax wealth. When that average tax rate is applied to the value of Texas production, for example, it produces a very large number. When that average tax rate is applied against the production figure for a nonmineral State, it produces a zero.

So there is a wide variety of ways of dealing with this issue if the Congress has a mind to give weight to the additional revenue raising power of the severance States.

Senator DURENBERGER. Dr. Grasberger, do you want to add any comments to that?

Mr. GRASBERGER. As for the traumatic shock which John made reference to, which would occur if the measure were to be incorporated in the formula, this could be alleviated by phasing it in over a number of years, by assigning different weights and gradually moving from one measure to another.

Senator DURENBERGER. In your testimony I believe you described some 40 or so programs that are specifically aimed at alleviating fiscal disparities. It also seems to me that you reached a conclusion that they are actually working in almost the opposite direction to perpetuate disparities.

Am I correct in drawing that conclusion?

Mr. **Grasberger**. Yes, that was our finding.

Senator **Durenberger**. I thought that was what I was hearing. Is there anything to be learned in this whole disparities business from the Canadians or Australians that is of some value to us in our efforts?

Mr. **Grasberger**. Well, Canadians have a more radical approach to equalization than we would ever dare adopt in that they distribute funds only to those provinces with below average fiscal capacity and nothing to those with above average.

Senator **Durenberger**. That is how simple it is?

Mr. **Grasberger**. That is how simple it is.

Mr. **Shannon**. May I add a footnote. Prophets are not without honor except in their own country. There is clear evidence that, when Canada moved to this more sophisticated approach in the middle 1960's, they were influenced by ACIR's pioneering effort dealing with a representative tax system. During the debates of the Canadian Parliament our studies were cited as one of the reasons for going to this sophisticated tax capacity equalization. We haven't been nearly as successful in attracting the same kind of attention here on the Hill.

Senator **Durenberger**. Thank you both very much. I apologize for the lack of time to explore these issues further. Thank you for the studies and your thorough reports on the studies which will all be made part of this hearing record.[1] At this point I would also like to introduce a portion of a congressional staff study done by CBO.

[The prepared statements, with attachments, of Mr. Grasberger and Mr. Shannon, an ACIR letter to Senator Durenberger, and the portion of the CBO study referred to follow:]

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[1] See p. 58.

Center for Governmental Research Inc.

PREPARED STATEMENT OF FRIEDRICH J. GRASBERGER

GRANTS-IN-AID-FORMULA RESEARCH PROJECT

A SUMMARY OF FINDINGS

Introduction

This research project, sponsored by the National Science Foundation, came about in response to two major developments:

1. the Federal general revenue sharing debate, and
2. the frostbelt - sunbelt controversy.

Both of these developments raised issues with respect to grant-in-aid formula fairness and effectiveness in accomplishing grant objectives. The focus of our research was on how well or how badly federal grants equalize among states.

Defining and Measuring Equalization

In order to find answers to the question of the extent of federal equalization efforts we had to establish some standards regarding the nature of the intended equalization. We found no sets of rules, principles or techniques which were used with any sort of consistency in the construction of equalization formulas. It appears that where equalization was an objective, the distribution formula had to meet only one basic criterion, that of allocating grants in some inverse relationship to the perceived ability to pay of the recipient jurisdictions. The various grant-in-aid formulas exhibited different types of inverse mathematical relationships to states' per capita personal income (the standard measure of fiscal capacity) with an absence of any rationale why formulas of similar grant programs should have differing mathematical properties.

Our approach to measuring the equalization effects of grant-in-aid formulas was derived from the ACIR definition of what constitutes equalization. ACIR defines equalization as an aid process designed to compensate for differences in the imbalance between individual governmental jurisdictions' program needs and their relative financial abilities to suppport these functions at the desired level. We looked at a number of federal programs, assumed a "desired level" of support for the aided functions and measured to what extent Federal aid equalized, that is, made more uniform, the residual state-local effort required to finance these functions.

To explain further, if a desired level or minimum level of spending per need unit is assumed to be $100, we measured the tax effort for each state necessary to raise such amount and termed this pre-aid tax effort. We then calculated the Federal aid amount available for a $100 per need unit cost level for each state and subsequently calculated the post-aid tax effort figures by subtracting Federal aid from the $100 per need unit total. Perfect equalization under this system would occur when the federal aid formula yields amounts which permit the funding of aided services at uniform dollars per need unit levels and uniform state-local tax effort levels in all states.

Formula Classification and Analysis

In 1975, the reference year of our study, ACIR identified 147 formula-based Federal grant-in-aid programs to state and local governments which accounted for 80 percent of all aid funds. We developed a typology of these programs which classified the various programs by formula type, formula elements and a variety of other criteria. Approximately 40 of these programs, distributing an estimated $30 billion in FY 1975, were deemed to have equalization objectives. Of these, four programs, AFDC, Medicaid, GRS and

Vocational Education, distributing $18 billion, were selected for detailed analysis. This analysis included an evaluation of each formula element in terms of up-to-dateness, appropriateness to measure need, appropriateness to measure ability-to-pay, the appropriateness of the formula algorithms, and the effects of existing formula constraints (i.e., minimum and maximum allocations).

General Findings--Inconsistencies of Formula Types, Elements, Limitations

Our survey of formulas with equalization objectives uncovered a great variety of such formulas which happen to fall into four general classes, each with its own distinct mathematical properties. (See Exhibit A). We found no evidence that formula architects had a clear idea as to exactly why certain mathematical formulations were selected (e.g., why per capita income was squared), other than that prototypes of such formulas already existed and that they were satisfied with the resultant distributional patterns.

Our survey further uncovered a great variety of versions of individual formula elements. The 147 categorical grant-in-aid programs utilize 188 distinct elements including eleven versions of income measures.

Even if the mathematical formulations had been part of a systematic approach and the definitions of formula elements acceptable, formula architects frequently would weaken or even counteract the intended formula objectives by establishing formula limitations and constraints.

General Findings--Inadequacy of Formula Elements

Equalization-type aid formulas were expected to be responsive to need and to meet such needs inversely to a state's ability to pay. We found that formula elements descriptive of need were often inadequate or lacking entirely. Frequently, population was used as a need proxy without regard to the fact that states with equal populations may have substantially different concentrations of the population subgroups whose needs are to be met by a given program.

The serious weaknesses of formula elements intended to reflect needs are compounded by the fact that none of the formulas recognizes the existence of substantial variations among the states in the costs of providing a given public service. We estimate that, in 1975, cost-of-government indexes per unit of service range from 84 in Mississippi to 158 in Alaska.

The most common measure of fiscal capacity, per capita income, has been widely criticized for its inability to reflect a jurisdiction's ability-to-pay, primarily because it fails to include tax bases whose taxes are exported and born by the residents of other states. Our analytical work confirmed the superiority of the concept of the "Representative Revenue System" measure pioneered by ACIR and currently being refined and made available on a virtually current basis by the same organization..

To compound all these shortcomings even further, the formula elements are not only often poorly chosen but are also sadly out of date when applied. To illustrate, per capita incomes utilized in the AFDC formulas applicable to 1975 outlays represent the mean of the 1969, 1970, 1971 figures, in effect creating a 5-year lag. New York State saw its per capita income decline from a level of 20% above the U. S. average to 11% above over this time span.

Specific Findings

The utilization of the previously mentioned equalization measurement method permitted the evaluation of existing and alternative formulas in terms of their overall effectiveness to achieve equalization of tax effort and in terms of the contributions of individual formula characteristics and elements to such effectiveness. We found that:

1. Present Formulas Worsen Tax Effort Equality.

   All of the present aid formulas analyzed show a greater relative dispersion of post-aid than of pre-aid effort to fund expenditures of identical purchasing power per need unit in each state. In other words, present formulas worsen rather than improve relative interstate tax effort equality for comparable service levels. This is due to the fact that while equalizing formulas do tend to apportion funds in an inverse relationship to fiscal capacity they do so in a manner which gives some states more than they ought to receive (e.g., because of minimum allocations or squaring of fiscal capacity) and others less than their appropriate shares.

2. Alternative Formulas Increase Equalization.
   With very few exceptions, virtually all formula modifications and alternatives tested have greater equalization power than the present formulas. The modifications tested include updating of elements, removal of limits, adjustment for differential costs of government services, elimination of the per capita income squaring feature, substitution of the fiscal capacity per capita by a per-need-unit ratio and the use of a linear capacity equalization algorithm incorporating capacity/needs ratios.

3. Best Formulas Achieve Significant Improvements.
   Because of their simultaneous recognition of states' needs and capacities the "best" formula alternatives selected for each of the programs analyzed accomplish significant improvements in the relative post-aid tax effort measures compared to the pre-aid measures as well as in relation to present formulas and formulas with less comprehensive modifications.

4. Alternative Formulas' Impact Slight in General/Significant in Some States.

   Most formula modifications create relatively modest overall allocation changes, but changes in allocations of individual states and regions can be substantial. For example, as shown in Exhibit B depicting percentage changes in aid allocations resulting from various modifications of the Vocational Education Aid formula:

(a) the removal of the formula limits would change allocations by generally less than one percent but Washington, D.C. stands to lose 22.5 percent;

(b) the incorporation of a cost-of-government index would raise Alaska's allocation by 36.4 percent while decreasing North Carolina's at the other extreme by 11.8 percent. Most of the increases would occur in states with large populations;

(c) the updating of formula elements would increase New York's allocation by 6.5 percent while decreasing North Dakota's by 26.2 percent. Most of the changes would be within a + or -2 percent range.

(d) the use of a personal income per need unit rather than a personal income per capita formula element would raise Hawaii's apportionment by 10.8 percent and drop North Dakota's by 28.2 percent.

(e) the use of a representative tax system per need unit measure would raise New York's allocation by 21.4 percent while decreasing Wyoming's, Texas', and Louisiana's shares by over 20 percent, a strong reflection of the inclusion of the severance tax base into the capacity measurement.

(f) the use of a capacity equalizing formula would create substantial changes for most states, largely as a result of the compounding effects of the individual factors incorporated into this formula.

5. Aid Shift Toward Higher Income States.

Perhaps the most startling finding resulting from the distributional impact analysis phase of this project is a significant shift towards higher income states under most of the formula modifications and alternatives tested. This seemingly counterintuitive result is chiefly due to two factors: (a) nominal income is

> not necessarily a good indicator of the economic well being of a state--adjustments of such income for inter-state cost-of-living or cost-of-government differentials create substantial changes in the rankings of states; (b) it is frequently the high per capita income states which have disproportionately large concentrations of need units which create low capacity needs ratios.

Conclusion

The findings of our study point in a number of obvious directions. First of all, the Congress needs to gain a clear understanding of what exactly is intended by a grant with an equalization objective, of what is meant by fiscal disparities, and of what it is that is to be made more equal. Secondly, formula algorithms and formula elements must be selected so as to ensure that the intended equalization is achieved to the maximum degree possible. We believe that our work and that of several researchers involved in the G.R.S. formula research effort forms an adequate basis for the development of a systematic approach to equalization, and that the critical formula elements correctly and equitably measuring fiscal capacity and need are either available or can be made available.

A postscript. It should be emphasized that our study findings refer to interstate distributions of grants-in-aid only. Experience has shown that federally collected data used in grant-in-aid formulas deteriorate in quality as they pertain to smaller and smaller jurisdictions. Since different states create and monitor their own sets of data which might be of superior quality or of greater relevance it appears desirable to provide for optional intrastate equalization formulas generated by individual states for all major grant-in-aid programs which have intrastate allocation components.

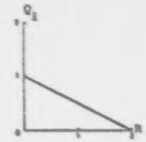
EXHIBIT A

CAPACITY EQUALIZING GRANT-IN-AID FORMULAS

("Q" represents the allotment ratio and "R" represents the ratio of a state's per capita income to the U.S. per capita income.)

Type I $Q_1 = (1 - .5R)$

Linear (Proportional) Redistribution



1975 Grant Programs Using Type I Income Redistribution	Approximate Program Allocation ($ mil.)
OE-20-13.494 Voc. Education:	$ 30
OE-24-13.498 Voc. Education	10
OE-25-13.498 Voc. Education	10
OE-26-13.499 Voc. Education:	20
OE-27-13.500 Voc. Education	5
OE-28-13.493 Voc. Education	430
OE-36-13.483 Streng. Instruction	20
SRS-22-13.707 Child Welfare Services	50
Total	$575

Example Program & Formula:

OE-20-13.494 Voc. Education

$A_i = W_i + X_i + Y_i + Z_i$ Where:

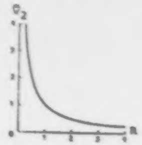
$$W_i = .5A_{us} [(P31_i (1-.5 \frac{II_i}{II_{us}}) \div \sum_{i=1}^{n} P31_i (1-.5 \frac{II_i}{II_{us}})]$$

$$X_i = .2A_{us} [P32_i (1-.5 \frac{II_i}{II_{us}}) \div \sum_{i=1}^{n} P32_i (1-.5 \frac{II_i}{II_{us}})]$$

(Continued)

Type II $Q_2 = \frac{1}{R}$

Rectangular Hyperbola



1975 Grant Programs Using Type II Income Redistribution	Approximate Program Allocation ($ mil.)
AGR-09-10.418 Water & Waste Disposal Systems for Rural Areas	$ 35
AGR-11-10.424 Rural Indust. Assistance Grants for Dev. of Private Business	15
OHD-03-13.630 Devel. Disabilities	35
PHS-01-13.257 Alcohol Abuse	50
PHS-02-13.211 Maternal & Child Health	65
PHS-03-13.232 Maternal & Child Health	200
PHS-04-13.269 Drug Abuse	35
PHS-05-13.240 County Mental Health Centers: Construction	25
WRC-01-65.001 Water & Related Land Resources Planning	3
Total	$463
General Revenue Sharing	$6,130

Example Program & Formula:

PHS-01-13.257 Alcohol Abuse

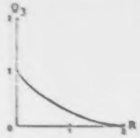
$$A_i = .33\, A_{us} \frac{Pl_i}{Pl_{us}} + .67 \frac{Pl_i \frac{II_{us}}{II_i}}{\sum_{i=1}^{n} Pl_i \frac{II_{us}}{II_i}}$$

M = $200,000

(Continued)

Type III $Q_3 = (1 - .5R)^2$

Convex Parabola



1975 Grant Programs Using Type III Income Redistribution	Approximate Program Allocation ($ mil.)
OHD-08-13.624 Voc. Rehabilitation	$600

Example Program & Formula:

OHD-09-13.624 Voc. Rehabilitation

$$A_i = A_{us} \left[\frac{Pl_i (1.0-.5 \frac{II_i}{II_{us}})^2}{\sum_{i=1}^{n} Pl_i (1.0-.5 \frac{II_i}{II_{us}})}\right]$$

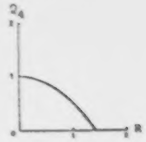
M = .25% A_{us} or $2,000,000 whichever is greater

H = FY 1973

Where:
A_{us} = Total U.S. allocation for program
A_i = State allocation
Pl_{us} = Total U.S. population
Pl_i = Total state population

Type IV $Q_4 = (1 - .5R^2)$

Concave Parabola



1975 Grant Programs Using Type IV Income Redistribution	Approximate Program Allocation ($ mil.)
SRS-05-13.714 Medicaid	$ 6,740
SRS-06-13.761 AFDC	4,585
Total	$11,325

Example Program & Formula:

SRS-05-13.714 Medicaid

$$A_i = (1.00-.45 \frac{II_i^2}{II_{us}^2}) E58 + .75\, E59 + .90\, E60 + .75\, E61 + 1.00\, E62 + .90\, E63 + .50\, E64$$

$(1-.45 \frac{II_i^2}{II_{us}^2})$ must be $\geq .50$ & $\leq .83$

A_i = State allocation

E58 = Medical assistance expenditure under the state Medicaid plan

E59-E64 = These are program related expenditure categories--see Appendix (2-3): 1.

EXHIBIT A (Continued)

Type I (Continued)

$Y_i = .15A_{us}\ [P33_i\ (1-.5\ \frac{I1_i}{I1_{us}}) \div \sum_{i=1}^{n} P33_i\ (1-.5\ \frac{I1_i}{I1_{us}})]$

$Z_i = .15A_{us}\ [W_i + X_i + Y_i \div \sum_{i=1}^{n} W_i + X_i + Y_i]$

$(1-.5\ \frac{I1_i}{I1_{us}})$ must be $\geq .40$ & $\leq .60$

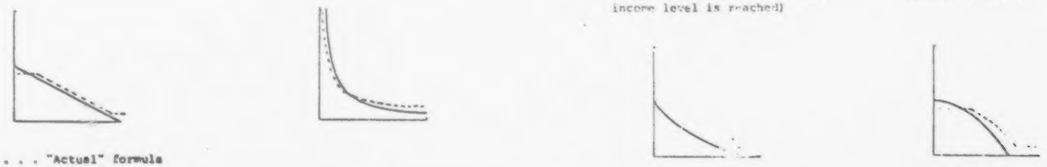
$N = \$10,000$

Where: A_{us} = Total U.S. allocation for program
A_i = State allocation
$P31_i$ = State population ages 15-19
$P3$[illegible] = State population ages 20-24
$P33_i$ = State population ages 25-65
$A1_{us}$ = Per capita income of the U.S.
$A1_i$ = Per capita income of the state

Type II (Continued)

Where: A_{us} = Total U.S. allocation for program
A_i = State allocation
$P1_{us}$ = Total U.S. population
$P1_i$ = Total state population
$I1_{us}$ = Per capita income of the U.S.
$I1_i$ = Per capita income of the state

Dilution Effects of Selected Formulas*



- Dilution Effect #1 - Maximum & Minimum Constraints

- Dilution Effect #2 - Non-Equalizing Variable

- Dilution Effect #3 - Minimum $ Amount (minimum dollar will cause allocations to become discontinuous after a certain income level is reached)

- Dilution Effect #1 - Max. & Min. Constraints
- Dilution Effect #4 - Modification of N

Key: . . . . "Actual" formula
——— "Pure" formula

*These graphs are meant to be illustrative, and are not drawn to scale.

EXHIBIT B

PERCENT OF GAINS AND LOSSES UNDER SELECTED ALTERNATIVE FORMULAS, BY STATE AND REGION
VOCATIONAL EDUCATION

State	Present Aid ($000)	Selected Formula Modifications and Alternatives					
		ML	COG	Update Elements	IPMU	RTS/PMU	CAP. EQUAL. Formula
U.S. Total	$420,784	0.0	0.0	0.0	0.0	0.0	0.0
New England	22,337	- 0.3	3.2	3.8	3.6	11.2	10.9
Connecticut	4,747	- 1.2	5.8	2.9	4.8	11.3	15.6
Maine	2,442	- 0.3	- 6.8	0.4	- 1.0	1.1	-13.8
Massachusetts	10,463	- 0.3	6.6	5.4	4.8	16.8	20.5
New Hampshire	1,631	- 0.3	- 3.9	1.5	0.6	- 3.9	-10.5
Rhode Island	1,948	- 0.3	0.9	4.0	4.6	13.7	7.5
Vermont	1,105	- 0.3	- 3.8	2.8	0.4	- 2.4	- 7.8
Mideast North	62,678	- 0.3	7.9	3.5	4.4	13.5	15.6
New Jersey	11,435	- 0.3	8.9	1.7	2.7	8.6	10.4
New York	28,111	- 0.3	14.1	6.5	7.5	21.4	29.6
Pennsylvania	23,132	- 0.3	- 0.2	0.9	1.5	6.3	1.2
Mideast South	9,743	- 1.0	1.1	- 0.2	2.6	8.2	10.5
Delaware	1,002	- 0.3	8.6	0.4	2.0	- 5.6	17.7
DC	1,180	-22.5	3.7	0.1	- 0.1	5.4	37.6
Maryland	7,561	- 0.3	- 0.4	- 0.3	3.1	10.4	5.3
Great Lakes	78,634	- 0.3	4.1	- 0.7	- 1.5	1.0	12.4
Illinois	18,795	- 0.3	7.3	0.1	- 0.8	0.1	12.1
Indiana	11,132	- 0.3	5.9	2.3	- 3.4	- 2.2	3.9
Michigan	17,494	- 0.3	8.5	- 1.2	- 3.4	6.6	28.5
Ohio	21,542	- 0.3	1.9	0.5	0.4	- 0.9	8.7
Wisconsin	9,671	- 0.3	- 1.0	1.2	- 1.7	0.7	1.7
Plains	35,260	- 0.3	- 3.9	- 6.2	- 9.0	- 5.9	-15.1
Iowa	5,981	- 0.3	- 5.9	- 9.5	-14.3	-11.3	-24.9
Kansas	4,739	- 0.3	- 7.6	- 6.8	- 8.7	- 7.9	-20.2
Minnesota	8,229	- 0.3	- 1.1	- 5.1	- 8.1	- 3.7	- 5.8
Missouri	9,781	- 0.3	- 0.1	- 0.1	- 1.5	0.3	- 4.7
Nebraska	3,205	- 0.3	- 8.4	- 8.0	-11.4	- 9.0	-24.4
North Dakota	1,604	- 0.3	- 8.7	-26.2	-28.2	-16.0	-39.4
South Dakota	1,721	- 0.3	- 8.4	-10.9	-16.4	-11.3	-31.5
Southeast	107,916	1.2	- 6.9	- 0.8	- 1.0	- 3.9	-15.5
Alabama	8,707	3.7	- 2.9	0.1	- 0.1	- 0.1	-12.0
Arkansas	4,737	5.1	- 7.3	0.1	- 1.6	- 1.3	-27.0
Florida	14,900	- 0.3	- 9.4	- 1.7	- 4.4	- 5.6	-23.0
Georgia	11,289	- 0.3	- 8.5	- 1.2	- 0.6	- 2.7	-13.8
Kentucky	8,095	0.1	- 6.2	0.1	- 1.4	- 9.1	-14.0
Louisiana	9,431	1.0	- 3.5	0.1	- 0.7	-22.0	-10.2
Mississippi	5,836	9.9	- 0.4	0.1	- 0.1	0.0	-16.8
North Carolina	13,008	- 0.3	-11.8	- 1.6	- 0.2	0.2	-19.5
South Carolina	7,088	2.9	- 7.2	0.1	- 0.1	- 0.1	-13.5
Tennessee	9,829	- 0.3	- 8.3	- 0.9	- 1.2	- 2.0	-18.9
Virginia	10,760	- 0.3	- 5.9	- 2.5	0.2	3.5	- 6.3
West Virginia	4,236	0.8	- 2.2	0.1	- 0.1	- 8.7	- 7.0
Southwest	40,303	- 0.3	- 5.5	- 0.7	- 1.5	-18.4	-11.6
Arizona	4,476	- 0.3	- 1.0	0.8	- 0.9	- 1.5	- 0.9
New Mexico	2,839	0.5	- 4.1	0.1	- 0.1	-13.0	- 6.1
Oklahoma	6,129	- 0.3	- 6.4	- 1.3	- 2.1	-16.6	-18.7
Texas	26,860	- 0.3	- 6.2	- 1.0	- 1.6	-22.2	-12.3
Rocky Mountain	12,642	- 0.3	- 4.5	- 0.5	- 0.5	- 5.8	- 4.5
Colorado	5,297	- 0.3	- 2.3	0.2	3.0	- 2.2	3.1
Idaho	1,883	- 0.3	- 7.1	- 3.5	- 4.8	- 4.7	-16.4
Montana	1,705	- 0.3	- 7.9	- 4.4	- 5.0	- 9.8	-17.9
Utah	2,985	- 0.3	- 3.6	1.7	- 1.6	- 6.2	- 1.1
Wyoming	771	- 0.3	- 9.3	2.0	- 0.3	-23.8	-11.1
Far West	49,072	- 0.3	4.4	1.8	4.4	3.5	10.6
California	36,502	- 0.3	5.8	2.9	6.7	4.8	14.0
Nevada	918	- 0.3	0.9	- 0.6	5.5	- 7.7	- 1.5
Oregon	4,685	- 0.3	- 1.9	- 1.0	- 1.0	- 3.6	- 4.7
Washington	6,966	- 0.3	1.9	- 1.6	- 1.0	3.0	5.0
Non-Contig. St.	2,199	- 0.3	16.4	3.9	7.1	5.8	47.6
Alaska	627	- 0.3	36.4	- 1.6	- 2.4	- 4.5	89.1
Hawaii	1,572	- 0.3	8.4	4.7	10.9	10.0	31.1

NOTE: See Table V-6 for key to abbreviations

PREPARED STATEMENT OF JOHN SHANNON

Measuring Fiscal Capacity

Fiscal capacity--the revenue generating power of a governmental entity--has been measured in various ways. In estimating the revenue raising capacity of the 50 state-local revenue systems, the measures range from a single indicator of economic activity (per capita income) to a composite index constructed from a number of revenue sources. In designing federal aid formulas, Congress has consistently favored the use of the per capita income approach--a proxy for the resources a government can tap for revenue.

Over the last two decades, the ACIR has periodically examined various measures of state-local fiscal capacity and has developed the representative tax system.[1] The Taxation and Finance staff is currently working on a study of state-local fiscal capacity and will be presenting its report to the Commission later this year. As part of this effort, the staff has reexamined the representative tax system as an alternative to the per capita income yardstick to measure the ability of governments to finance public services. This approach to estimating fiscal capacity is well described by Kent Halstead in Tax Wealth in Fifty States:

> "The representative tax system defines the tax capacity of a state and its local governments as the amount of revenue they could raise (relative to other state-local governments) if all fifty state-local systems applied the identical tax rates (national averages) to their respective tax bases. Fiscal capacity is thus viewed as an attribute of government derived from the economic strength inherent within a state's

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[1] ACIR, Measures of State and Local Fiscal Capacity and Tax Effort, M-16, Washington, D.C., U.S. Government Printing Office, October 1962; and ACIR, Measuring the Fiscal Capacity and Effort of State and Local Areas, M-58, Washington, D.C., U.S. Government Printing Office, March 1971.

> jurisdictional boundaries. The system is 'representative' in the sense that potential revenue is determined by applying a uniform taxing system in a state which represents a cross section of state and local tax practice currently affecting most citizens."2/

Essentially, the representative tax system derives tax capacity estimates by aggregating all state and local tax bases, where each source is accorded a weight equal to its importance in the overall system of state and local finance.3/

Our preliminary estimates of state-local tax capacity for 1979 (the representative tax system's measure of fiscal capacity) are consistent with previous studies. The per capita income measure now used in federal aid formulas understates the revenue generating power of the mineral-rich states, and overstates the tax capacity of states with relatively high personal income, but relatively small property, sales or mineral tax bases--e.g. New York, Massachusetts and Connecticut.

The inadequacies of conventional per capita income as a measure of fiscal capacity are illustrated by comparing the differences between the per capita income and tax capacity indices.

2/ Halstead, D. Kent, Tax Wealth in Fifty States, National Institute of Education, Washington, D.C., U.S. Government Printing Office, 1978, p.4.

3/ All tax bases are standardized and included in the tax capacity calculation, regardless of whether a state actually utilizes each and every tax source.

THE OVER AND UNDER ESTIMATE OF STATE-LOCAL TAX CAPACITY WHEN THE CONVENTIONAL PER CAPITA INCOME MEASURE IS COMPARED TO THE REPRESENTATIVE TAX SYSTEM FINDINGS.

(For those states with per capita-tax wealth differences of more than ten percent in 1979).

State	Tax Capacity Index 1/	Income Index 2/	Under-estimate	Over-estimate
Wyoming	190	113	-40.5%	
Alaska	213	128	-39.9	
Nevada	164	120	-26.8	
Montana	113	88	-22.1	
Louisiana	109	86	-21.1	
New Mexico	109	86	-21.1	
Texas	121	100	-17.4	
West Virginia	101	84	-16.8	
Oklahoma	112	97	-13.4	
North Dakota	106	94	-11.3	
New Jersey	100	1b		+11.1
Dist of Columbia	107	120		+12.1
Massachusetts	90	101		+12.2
Rhode Island	83	97		+16.9
New York	86	104		+20.9

1/ Based on the ACIR-NIE representative tax system approach.
2/ The per capita income measure currently used in federal formulas.
Source: ACIR staff estimates (preliminary). For more detail see Appendix Tables I and II.

Of the ten states where per capita income understates their tax capacity by more than ten percent, nine have large mineral deposits, such as coal, oil or gas. Nevada is the lone non-energy producing state that has a tax capacity that exceeds its income by more than ten percent; this is attributable to its large tourist trade.

Three recent developments reinforce the need to reconsider the use of the per capita income measure in federal aid programs:

1. The differences between per capita income and tax capacity are likely to rise in the near future because of energy price decontrol and the continued strength of OPEC. Higher energy prices yield corresponding growth in the energy wealth of a few states which can be tapped through the severance, property and corporate income taxes.

2. The shift from categorical grants to block grants is likely to generate a demand for more fiscal equalization. Although at present the Administration is willing to initially allocate their new block grants in proportion to past entitlements, in time block grants may have to be given a stronger equalization role to justify their continued existence.

3. Funding reductions and caps will increase demands to allocate the remaining federal aid resources to those jurisdictions most in need.

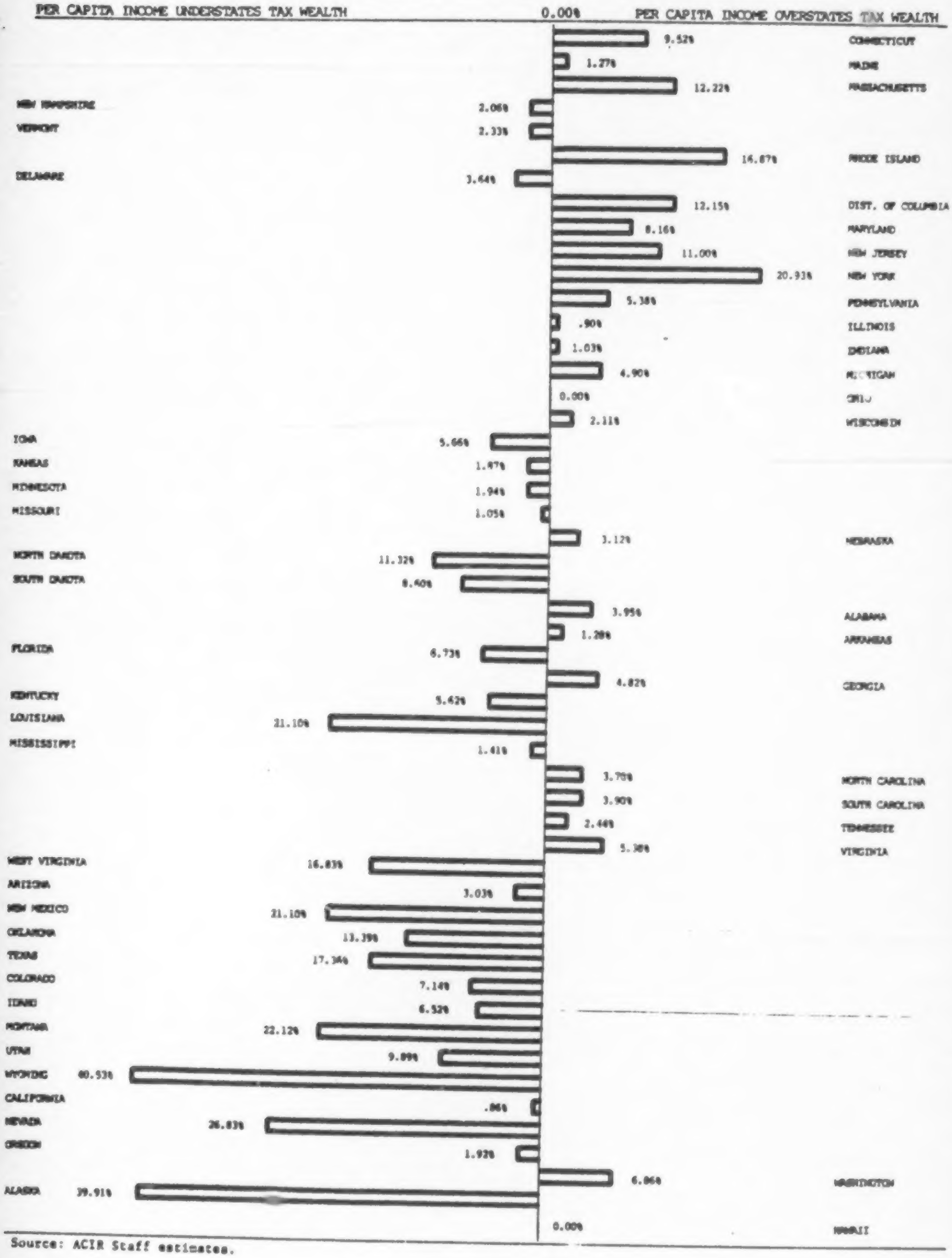
There are technical and political considerations, however, that will slow down any quick effort to replace the conventional per capita income measure with the more sophisticated tax capacity estimates produced by the representative tax system approach.

Technical problems. The per capita income measure is easier to understand than the more complex tax capacity estimate. In addition, the per capita income estimates prepared by the Bureau of Economic Analysis enjoy the great advantage of long acceptance in federal aid formulas. Moreover, its challenger--the state-local tax wealth estimates prepared under the representative tax system approach--is still in the process of refinement. Finally, the resident per capita income estimates are provided on a more timely basis.

Political problems. The replacement of the traditional per capita income measure with the tax capacity estimates is bound to be highly controversial because it would create a new set of winners and losers, especially in the AFDC and Medicaid programs. For example, if the 1979 tax capacity estimates had been used instead of per capita income, New York's matching ratio for the two welfare programs would have dropped from 50 percent to about 33%, thereby reducing its own state-local welfare outlays by over $1 billion in 1980. The state by state matching rate changes are set forth in Tables III and IV.

In summary, while the tax capacity estimates generated by the representative tax system enjoy a theoretical and measurement advantage over the conventional per capita income measure, they face an uphill battle when tested for political acceptability.

TABLE I. DIFFERENCES BETWEEN TWO FISCAL CAPACITY MEASURES: TAX WEALTH AND PER CAPITA INCOME (1979)



Source: ACIR Staff estimates.

TABLE II. FISCAL CAPACITY COMPARISONS BETWEEN PER CAPITA INCOME AND THE REPRESENTATIVE TAX SYSTEM.

State	1979 Per Capita Income	1979 Tax Capacity	1977 Per Capita Income	1977 Tax Capacity	1975 Per Capita Income	1975 Tax Capacity
New England						
Connecticut	115	105	114	108	116	108
Maine	80	79	81	82	81	84
Massachusetts	101	90	102	93	104	95
New Hampshire	95	97	94	102	93	103
Rhode Island	97	83	96	87	97	88
Vermont	84	86	83	92	84	94
Mideast						
Delaware	106	110	109	122	112	125
Dist. of Col.	120	107	127	118	124	115
Maryland	106	98	108	100	109	100
New Jersey	111	100	112	104	116	107
New York	104	86	106	92	111	96
Pennsylvania	98	93	99	98	100	98
Great Lakes						
Illinois	112	111	114	112	115	112
Indiana	98	97	98	100	96	97
Michigan	107	102	108	104	103	99
Ohio	99	99	101	103	98	103
Wisconsin	97	95	96	97	96	96
Plains						
Iowa	100	106	98	104	101	105
Kansas	105	107	100	103	102	107
Minnesota	101	103	101	99	99	97
Missouri	94	95	93	95	93	95
Nebraska	99	96	95	99	100	102
North Dakota	94	106	84	96	101	100
South Dakota	85	93	83	89	85	93
Southeast						
Alabama	79	76	80	78	79	78
Arkansas	79	78	78	79	77	79
Florida	97	104	96	104	96	104
Georgia	87	83	86	85	86	87
Kentucky	84	89	85	86	83	88
Louisiana	86	109	85	104	82	104
Mississippi	70	71	71	70	69	71
North Carolina	84	81	84	83	84	85
South Carolina	80	77	80	78	80	78
Tennessee	84	82	83	83	82	84
Virginia	98	93	98	91	98	94
West Virginia	84	101	85	93	85	92
Southwest						
Arizona	96	99	92	94	92	96
New Mexico	86	109	83	98	83	92
Oklahoma	97	112	91	102	89	101
Texas	100	121	98	112	95	112
Rocky Mountain						
Colorado	104	112	102	109	102	107
Idaho	86	92	88	89	89	91
Montana	88	113	87	103	92	102
Utah	82	91	84	91	84	89
Wyoming	113	190	108	155	105	156
Far West						
California	115	116	114	114	112	110
Nevada	120	164	117	156	113	151
Oregon	102	104	102	104	98	100
Washington	109	102	107	101	107	98
Alaska	128	213	149	149	165	156
Hawaii	105	105	109	107	115	109
U.S. Average	100	100	100	100	100	100

Sources: Income: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Washington, D.C., August, 1980.
Tax Capacity, 1975 and 1977: National Institute of Education, *Tax Wealth in Fifty States*, and *Tax Wealth in Fifty States, 1977 Supplement*, Washington, D.C., 1978 and 1979, respectively. (Revised by ACIR staff)
Tax Capacity, 1979: ACIR staff estimates.

TABLE III. FEDERAL MATCHING RATES FOR AFDC AND MEDICAID BASED ON THE CURRENT LAW AND ON TAX WEALTH INDICES FOR 1980.*

	AFDC MATCHING RATE			MEDICAID MATCHING RATE		
STATE	Current Law 1980-81	Tax Wealth 1979	Difference	Current Law 1980-81	Tax Wealth 1979	Difference
Alabama	65.00 %	65.00 %	-0-	71.32 %	73.84 %	+2.52
Alaska	50.00	50.00	-0-	50.00	50.00	-0-
Arizona	57.19	50.86	-6.33	61.47	55.78	-5.69
Arkansas	65.00	65.00	-0-	72.87	72.37	-0.50
California	50.00	50.00	-0-	50.00	50.00	-0-
Colorado	50.00	50.00	-0-	53.16	50.00	-3.16
Connecticut	50.00	50.00	-0-	50.00	50.43	+.43
Delaware	50.00	50.00	-0-	50.00	50.00	-0-
Dist. of Colum.	50.00	50.00	-0-	50.00	50.00	-0-
Florida	54.38	50.00	-4.38	58.94	51.37	-7.57
Georgia	63.06	65.00	+1.94	66.76	68.90	+2.14
Hawaii	50.00	50.00	-0-	50.00	50.61	+0.61
Idaho	61.89	57.28	-4.61	65.70	61.56	-4.14
Illinois	50.00	50.00	-0-	50.00	50.00	-0-
indiana	52.53	52.82	+0.29	57.28	57.53	+0.25
Iowa	51.74	50.00	-1.74	56.57	50.00	-6.57
Kansas	50.00	50.00	-0-	53.52	50.00	-3.52
Kentucky	64.52	60.54	-3.69	68.07	64.49	-3.58
Louisiana	65.00	50.00	-15.00	68.82	50.00	-18.82
Maine	65.00	65.00	-0-	69.53	71.61	+2.08
Maryland	50.00	52.36	+2.36	50.00	57.13	+7.13
Massachusetts	50.00	59.39	+9.39	51.75	63.45	+11.70
Michigan	50.00	50.00	-0-	50.00	53.31	+3.31
Minnesota	50.71	50.00	-0.71	55.64	51.96	-3.68
Mississippi	65.00	65.00	-0-	77.55	77.51	-0.04
Missouri	55.96	54.63	-1.33	60.36	59.17	-1.19
Montana	60.31	50.00	-10.31	64.28	50.00	-14.28
Nebraska	52.91	53.98	+1.07	57.62	58.58	+0.96
Nevada	50.00	50.00	-0-	50.00	50.00	-0-
New Hampshire	56.78	53.36	-3.42	61.11	58.02	-3.09
New Jersey	50.00	50.00	-0-	50.00	54.65	+4.65
New Mexico	65.00	50.00	-15.00	68.03	50.00	-19.03
New York	50.00	62.69	+12.69	50.00	66.42	+16.42
North Carolina	64.04	65.00	+0.96	67.64	70.27	+2.63
North Dakota	57.16	50.00	-7.16	61.44	50.00	-11.44
Ohio	50.11	51.02	+0.91	55.10	55.92	+0.82
Oklahoma	59.60	50.00	-9.60	63.64	50.00	-13.64
Oregon	50.73	50.00	-0.73	55.66	50.99	-4.47
Pennsylvania	50.16	56.99	+6.83	55.14	61.29	+6.15
Rhode Island	53.12	65.00	+11.88	57.81	69.00	+11.19
South Carolina	65.00	65.00	-0-	70.97	73.27	+2.30
South Dakota	65.00	56.88	-8.12	68.78	61.19	-7.59
Tennessee	65.00	65.00	-0-	69.43	70.10	+0.67
Texas	53.72	50.00	-3.72	58.35	50.00	-8.35
Utah	64.52	58.58	-5.94	68.07	62.72	-5.35
Vermont	64.88	63.40	-1.48	68.90	67.06	-1.84
Virginia	51.71	56.86	+5.15	56.54	61.17	+4.63
Washington	50.00	50.00	-0-	50.00	52.99	+2.99
West Virginia	63.73	50.00	-13.73	67.35	54.58	-12.77
Wisconsin	53.27	54.52	+1.25	57.95	59.07	+1.12
Wyoming	50.00	50.00	-0-	50.00	50.00	-0-

---

* The current law is based on per capita income. For AFDC states can choose the matching rate which is most favorable to them. Under present law, only Arizona and Texas use the AFDC formula to determine their matching share; all other states use the Medicaid matching rate do compute their AFDC matching share. The differences in the matching rates are not as dramatic as those between the tax wealth and per capita income because of forumla floors and ceilings — the AFDC law has a minimum matching rate of 50% and a maximum of 65%; the Medicaid law has a minimum of 50% and a maximum of 85%.

TABLE IV. ESTIMATED CHANGES IN FEDERAL AID TO STATES FOR MEDICAID AND AFDC (1980) IF TAX CAPACITY ESTIMATES HAD BEEN USED INSTEAD OF PER CAPITA INCOME
(thousands of dollars)

STATE	Federal Aid Under Current Law	Federal Aid Using Tax Capacity	Change	Federal Aid Using Tax Capacity And Lowering Minimum*	Change
New England					
Connecticut	$ 285,571	$ 288,027	$ +2,456	$ 288,027	$ +2,456
Maine	149,589	154,062	+4,473	154,062	+4,473
Massachusetts	1,187,759	1,266,388	+78,629	1,266,388	+78,629
New Hampshire	66,683	63,309	-3,374	63,309	-3,374
Rhode Island	141,847	169,308	+27,461	169,308	+27,461
Vermont	71,493	69,584	-1,909	69,584	-1,909
Mideast					
Delaware	285,571	288,027	+2,456	288,027	+2,456
Dist. of Col.	40,340	40,340	-0-	36,766	-3,574
Maryland	326,022	372,513	+46,491	372,513	+46,491
New Jersey	668,640	730,824	+62,184	730,824	+62,184
New York	3,380,593	4,490,779	+1,110,186	4,490,779	+1,110,186
Pennsylvania	1,195,560	1,328,865	+133,305	1,328,865	+133,305
Great Lakes					
Illinois	1,042,277	1,042,277	-0-	924,708	-117,569
Indiana	319,425	320,830	+1,405	320,830	+1,405
Michigan	1,187,759	1,266,388	+78,269	1,266,388	+78,269
Ohio	817,555	822,527	+4,972	822,527	+4,972
Wisconsin	12,505	12,505	-0-	10,004	-2,501
Plains					
Iowa	230,332	203,591	-26,741	201,107	-29,225
Kansas	159,646	149,141	-10,505	145,949	-13,697
Minnesota	477,178	445,637	-31,541	445,637	-31,541
Missouri	338,747	332,074	-6,673	332,074	-6,673
Nebraska	98,994	100,646	+1,652	100,646	+1,652
North Dakota	44,726	36,348	-8,328	36,078	-8,648
South Dakota	58,660	52,184	-6,476	52,184	-6,476
Southeast					
Alabama	274,597	284,291	+9,694	284,291	+9,694
Arkansas	226,009	224,450	-1,559	224,450	-1,559
Florida	394,015	343,424	-50,591	343,424	-50,591
Georgia	427,059	440,767	+13,708	440,767	+13,708
Kentucky	341,806	323,826	-17,980	323,826	-17,980
Louisiana	411,283	298,797	-112,486	280,690	-130,593
Mississippi	227,337	227,224	-113	227,224	-113
N. Carolina	401,204	416,811	+15,607	416,811	+15,607
S. Carolina	250,630	258,750	+8,120	258,750	+8,120
Tennessee	338,230	341,511	+3,281	341,511	+3,281
Virginia	334,650	362,055	+27,405	362,055	+27,405
West Virginia	140,040	113,488	-26,552	113,488	-26,552
Southwest					
Arizona 1/	19,184	17,061	-2,123	17,061	-2,123
New Mexico	88,154	64,793	-23,361	60,983	-27,171
Oklahoma	281,019	220,796	-60,223	190,679	-90,340
Texas 2/	774,048	670,772	-103,276	536,618	-237,430
Rocky Mountain					
Colorado	144,605	144,605	-0-	124,678	-19,927
Idaho	58,195	54,529	-3,666	54,529	-3,666
Montana	55,298	43,011	-12,287	36,430	-18,868
Utah	97,313	89,665	-7,648	89,665	-7,648
Wyoming	12,505	12,505	-0-	10,004	-2,501
Far West					
California	2,699,893	2,699,893	-0-	2,159,914	-539,979
Nevada	30,586	30,586	-0-	24,469	-6,117
Oregon	196,120	179,665	-16,455	179,665	-16,455
Washington	343,487	364,027	+20,540	364,027	+20,540
Alaska	38,089	38,089	-0-	30,471	-7,618
Hawaii	91,620	92,738	+1,118	92,738	+1,118
Total	$21,412,213	$22,649,193	$+1,236,980	$21,750,081	$+337,868

Notes: * Reduction of minimum federal matching share from 50% to 40%

1/ Arizona does not participate in Medicaid.

2/ Arizona and Texas are the only states that use the AFDC formula. Because of the way the AFDC formula is structured the estimates presented here overstate the amount they would be affected by a change from per capita income to tax capacity

Source: ACIR staff estimates (preliminary)

ADVISORY
COMMISSION ON INTERGOVERNMENTAL RELATIONS
WASHINGTON, D.C. 20575

June 16, 1981

Senator Dave Durenberger,
Chairman, Subcommittee on
Intergovernmental Relations,
U.S. Senate,
Washington, D.C., 20510

Dear Senator Durenberger:

This letter is in response to Senator Sasser's inquiry as to the possibility that "skewing" might occur from the use of either the representative tax system or cost of government adjustments in federal grant programs.

The skewing problem in federal grant programs arises through the use of open-ended matching provisions (such as in AFDC or Medicaid) or tax effort (as in the case of General Revenue Sharing) in the allocation formulas. In effect these factors reduce the "price" of government revenues to the recipient jurisdiction's government. Because a reduction in the price of a good or service generally increases the demand, total public expenditures on the good in question are higher in the presence of price incentives than they otherwise would be.

The use of the representative tax system's measure of "tax capacity" does not result in skewing because states or localities would not be able to increase the size of their grant payment simply by raising their taxes or expenditures. This holds true for all formulas that are designed without matching or tax effort provisions. Tax capacity, like per capita income, is a measure of the potential ability of a government to raise tax revenue; it does not depend on the amount of revenue a government actually collects. Thus, the replacement of per capita income with tax capacity in federal grant programs would not provide any additional incentives for states to expand their public sectors over and above those incentives that might result from the simple effects of substituting one capacity factor for another. For example, replacement of the income factor by tax capacity in the Medicaid formula would reduce Alabama's statutory matching rate by 3.5% which would theoretically offer the state an incentive in increase its total (federal-state-county) Medicaid obligations. However, there would not be any additional incentive provided by the use of tax capacity beyond the change stipulated in the present design of the formula.

The representative tax system also generates a measure of "tax effort" for states that is equivelent to the ratio of actual tax collections to tax capacity. The use of this factor in federal grant formulas, just like the present use of tax effort in General Revenue Sharing, would offer an incentive for states to increase their taxes. That is, the use of the tax effort factor, whether based on tax capacity or income, leads to an unambiguous skewing effect, the size of which is unknown.

Cost of government adjustments do not inherently yield incentives for states to increase spending. A federal formula that takes into account real interstate differences in prices will certainly perform its function in a more equitible manner than if price differences are ignored. The reality that a dollar's purchasing power varies across jurisdictions is a significant determinant of a state's ability to provide services, and is one of the factors which the per capita income and tax capacity approaches have failed to accommodate. In measuring fiscal capacity, it would be preferable to measure "real" capacity based on differences in relative prices across jurisdictions. Furthermore, grants that are intended to provide the same real level of purchasing power must be adjusted by prices in order to meet that objective.

The major problem of cost of government adjustments is that it is extremely difficult to measure interstate differences in the prices of government purchases, or any other set of prices for that matter. The Bureau of Labor Statistics does not report individual state price indices or family budgets, nor does the Bureau estimate government cost variations. As a consequence, analysts have had to resort to various estimating techniques that may result in incentives for governments to increase their spending. If one measures the cost of government services by looking at government salaries, for example, there will very likely be a skewing effect. This occurs because higher salaries are invariably tied to higher spending through the interaction of demand and supply in labor markets. In general, higher demand (as represented by higher spending) will result in higher wages, even if all other factors are held constant. Thus, to the extent that salary differentials reflect demand related variables, salaries will overstate the "true" cost of government employees. In order to measure only cost-related factors, one has to be able to strip out variations in salaries (or other prices of government goods and services) that are demand related so that only supply related variations remain. If demand factors are left standing, skewing results becuase jurisdictions can receive higher grant payments simply because they are bigger spenders.

Two other concerns regarding cost of government adjustments are worthy of note. Instead of developing only one general cost of government index, it may be constructive to develop different cost indices for different types of grants. For example, in educational grants, teacher salaries would more likely be representative of cost variations than a general government cost index; similarly, in grants for wastewater treatment plants, construction cost indices would be more accurate.

For grants to individuals, such as AFDC or Food Stamps, general living cost indices would prove to be more precise indicators of the "real" interstate price differentials for those progrms.

Secondly, even if skewing results from the use of a cost of government index that incorporates demand influences, it may be worth using anyway because of the generally improved performance of the formula. The recognition of interstate price variations, through the use of an approximate measure, will yield much more satisfactory results than the current practice of ignoring them. Whether the improved allocative results are more valuable than the cost of creating incentives for expanding the state-local government sector is a balancing question which must be considered. In other words, the use of a cost of government adjustment should not be rejected simply on the basis of skewing because it may potentially offer much greater benefits in terms of treating grant recipients in a more equitible, albeit not perfect, manner.

In sum, neither the representative tax system nor cost of government adjustments inherently lead to skewing. However, if cost adjustments are not limited to supply factors or tax effort measures are used, incentives will be provided that encourage an expanded state or local public public sector. The use of cost of government adjustments that include skewing may still be justified if the trade-off for improved equity is favorable.

I hope these comments will be helpful to you. If you wish for any further clarification of these points, please give me a call.

Respectfully,

Robert B. Lucke
ACIR Fellow
Taxation and Finance

PORTION OF CONGRESSIONAL STAFF STUDY BY CBO

III. RESOURCES AVAILABLE TO STATE AND LOCAL GOVERNMENTS

The two major resources available to state and local governments to finance services are the funds they can raise through their own taxes and monies they receive as intergovernmental transfers. A jurisdiction's own resources depend on the economic vitality of the area and the resulting capacity of the tax base. The amount of intergovernmental aid available depends principally on decisions made at other levels of government.

STATE AND LOCAL OWN-SOURCE REVENUE CAPACITIES

Several measures of a jurisdiction's tax base are available, including population, income, and--for states--an indicator of representative tax capacity that combines numerous individual factors.

Population

Although the level of population does not directly indicate the resources available to a government, changing population affects both the demand for public services and the supply of taxable resources. Population growth may increase the demand for public services such as education, welfare, sewage, and police and fire protection. The added resources that accompany population growth may or may not be sufficient to cover the increased costs. Population loss may mean loss of higher-income families and thus a diminished ability to support services. Further, particularly for local governments, the loss of population is not automatically accompanied by a decline in capital facilities, which may require continued support by fewer residents.

From 1970 to 1977, the population of all but three states increased. On average, the population in these forty-seven states grew by 7.5 percent, while the major cities in those states lost about 1 percent of their population. The three other states--Pennsylvania, New York and Rhode Island--lost, on average, 1.2 percent of their population over this period while the population of the major cities in those states declined by nearly 9 percent (see Table 6).

TABLE 6. THE CHANGE IN POPULATION AND THE LEVEL AND CHANGE IN PER-CAPITA MONEY INCOME FOR STATES AND SELECTED MAJOR CITIES

States (by Census Region)	States			Selected Major Cities	Cities[c]		
	Population	Per-Capita Money Income[b]			Population	Per-Capita Money Income	
	Change 1970-77 (Percent)	Level 1975 (Dollars)	Change 1969-75 (Percent)		Change 1970-77 (Percent)	Level 1975 (Dollars)	Change 1969-75 (Percent)
NORTHEAST[a]	0.3	4,805	48.8		-8.6	4,564	48.7
New England							
Connecticut	2.2	5,571	43.4				
Massachusetts	1.2	4,964	45.7	Boston	-3.5	4,503	45.6
Maine	8.7	3,879	52.2				
Vermont	8.1	4,051	46.1				
New Hampshire	14.6	4,460	49.4				
Rhode Island	-1.5	4,769	65.9				
Mid Atlantic							
New York	-1.9	5,166	43.2	New York City	-7.6	5,222	41.2
				Rochester	-13.5	4,824	48.9
				Buffalo	-15.7	4,234	47.2
Pennsylvania	-0.1	4,786	56.1	Philadelphia	-8.8	4,660	54.5
				Pittsburgh	-15.0	4,919	60.2
New Jersey	2.1	5,600	52.4	Newark	-15.1	3,586	43.9
MIDWEST[a]	2.3	4,722	58.1		-10.2	4,961	54.6
East North Central							
Illinois	0.9	5,334	52.6	Chicago	-9.1	4,984	46.5
Indiana	2.4	4,673	52.2	Indianapolis	-5.4	5,171	49.0
Michigan	2.9	4,884	45.5	Detroit	-14.8	4,661	45.7
Ohio	0.1	4,772	49.2	Akron	-11.3	4,802	46.7
				Toledo	-6.4	4,850	49.1
				Cincinnati	-10.7	4,843	54.6
				Cleveland	-18.9	4,084	44.8
				Columbus	-1.4	4,587	51.6
Wisconsin	4.8	4,722	55.7	Milwaukee	-8.9	4,902	54.0

(Continued)

TABLE 6. CONTINUED

States (by Census Region)	States: Population Change 1970-77 (Percent)	States: Per-Capita Money Income[b] Level 1975 (Dollars)	States: Per-Capita Money Income[b] Change 1969-75 (Percent)	Selected Major Cities	Cities: Population Change 1970-77 (Percent)	Cities: Per-Capita Money Income Level 1975 (Dollars)	Cities: Per-Capita Money Income Change 1969-75 (Percent)
West North Central							
Iowa	2.0	4,640	60.9	Wichita	-3.1	5,403	65.8
Kansas	3.2	4,905	24.8	Minneapolis	-17.8	5,514	58.3
Minnesota	4.3	4,825	58.8	St. Paul	-14.1	5,336	57.1
				St. Louis	-16.8	4,278	56.9
Missouri	2.9	4,571	54.8	Kansas City	-9.6	5,197	56.1
				Omaha	3.2	5,186	58.6
Nebraska	4.5	4,722	68.8	Lincoln	9.6	5,223	62.3
				Fargo	-9.4	5,321	71.3
North Dakota	4.8	4,487	81.7				
South Dakota	3.0	4,131	73.1				
SOUTH[a]	10.7	4,271	64.4		4.4	4,796	69.2
West South Central							
				Little Rock	15.9	5,290	67.1
Arkansas	11.4	3,648	70.3	Baton Rouge	13.3	4,743	66.7
Louisiana	7.6	3,922	68.3	New Orleans	-5.4	4,398	62.6
				Tulsa	1.2	5,839	67.2
Oklahoma	9.7	4,469	65.9	Oklahoma City	0.9	5,265	62.8
				Dallas	0.0	5,715	54.6
Texas	14.0	4,461	66.2	Houston	22.2	5,723	69.2
				San Antonio	21.3	3,990	64.8
				El Paso	22.7	3,726	55.9
				Ft. Worth	-6.5	5,078	56.9

(Continued)

TABLE 6. CONTINUED

States (by Census Region)	States: Population Change 1970–77 (Percent)	States: Per-Capita Money Income[b] Level 1975 (Dollars)	States: Per-Capita Money Income[b] Change 1969–75 (Percent)	Selected Major Cities	Cities: Population Change 1970–77 (Percent)	Cities: Per-Capita Money Income Level 1975 (Dollars)	Cities: Per-Capita Money Income Change 1969–75 (Percent)
South Atlantic							
Florida	23.6	4,908	60.5	Jacksonville	4.7	4,761	66.9
				Tampa	-4.6	4,535	63.2
				Miami	3.5	4,501	59.6
Georgia	9.4	4,227	60.1	Atlanta	-16.2	4,820	52.7
Maryland	5.1	5,626	60.2	Baltimore	-11.2	4,577	59.1
Delaware	5.6	5,013	53.5				
North Carolina	8.2	4,044	63.5	Charlotte	22.6	5,218	59.9
South Carolina	10.8	3,819	65.8	Columbia	-2.5	4,430	70.4
Virginia	9.4	4,954	65.4	Norfolk	-8.4	4,377	56.8
West Virginia	5.8	4,008	71.8				
East South Central							
Alabama	7.0	3,894	68.1	Birmingham	-6.2	4,354	69.6
Kentucky	7.3	4,002	65.0	Louisville	-10.7	4,719	59.5
Mississippi	7.5	3,323	72.6	Jackson	24.0	4,713	65.5
Tennessee	9.0	4,015	63.0	Memphis	7.2	4,659	66.8
				Nashville/ Davidson	0.7	4,887	62.7
WEST[a]	12.5	5,130	65.9		3.2	5,582	56.2
Mountain		4,670	59.0				
Arizona	28.6			Phoenix	17.7	5,108	57.0
				Tucson	14.5	4,454	54.7
Colorado	18.1	5,193	67.2	Denver	-7.7	6,032	70.7
Idaho	19.2	4,417	67.1				

(Continued)

TABLE 6. CONTINUED

States (by Census Region)	States: Population Change 1970-77 (Percent)	States: Per-Capita Money Income[b] Level 1975 (Dollars)	States: Per-Capita Money Income[b] Change 1969-75 (Percent)	Selected Major Cities	Cities: Population Change 1970-77 (Percent)	Cities: Per-Capita Money Income Level 1975 (Dollars)	Cities: Per-Capita Money Income Change 1969-75 (Percent)
Utah	19.1	4,310	59.8	Salt Lake City	-5.1	5,435	66.6
Montana	9.7	4,463	65.5				
Nevada	29.2	5,493	54.6				
New Mexico	16.9	4,019	64.9				
Wyoming	21.6	5,094	76.0				
Pacific							
Alaska	35.9	7,969	113.9				
California	9.4	5,469	51.2				
				San Jose	30.9	5,340	57.3
				Los Angeles	-1.7	5,650	43.0
				San Francisco	-8.5	6,522	54.1
				Sacramento	2.9	5,293	56.5
				San Diego	14.8	5,357	52.3
				Oakland	-8.1	5,491	51.9
				Long Beach	-6.2	6,037	52.5
Hawaii	15.1	5,259	55.9	Honolulu	13.8	5,329	53.2
Oregon	13.5	4,963	57.7	Portland	1.0	5,661	60.2
Washington	7.9	5,369	59.9	Seattle	-7.9	6,441	59.0
U.S. AVERAGE[a]	6.2	4,699	59.2		-3.3	4,996	60.0

SOURCE: U.S. Department of Treasury, Office of Revenue Sharing, Initial State and Local Data Elements, Entitlement Periods 1, 10; U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1975, 1979, Tables 11, 24; U.S. Department of Commerce, City Government Finances in 1970-71, Table 7.

a. U.S. regional aggregations and totals are averages weighted by area population.

b. Money income includes wage and salary income, public assistance income, social security and railroad retirement income, and net self-employment income.

c. Central cities with population greater than 300,000.

During the 1970s, the rate of population growth varied greatly among states, as did the pattern of population change within states. Between 1970 and 1977, the rate of growth varied from less than one-half of one percent in the Northeast and slightly over 2 percent in the Midwest to over 10 percent in the South, and more than 12 percent in the West. Among several large cities examined, those in the Northeast and Midwest almost uniformly lost population, with the losses ranging from 1.4 percent in Columbus, Ohio to 18.9 in Cleveland. Most central cities in the South and West gained, but individual cities' experiences varied widely, ranging from Atlanta's loss of 16.2 percent to San Jose's 30.9 percent growth. The experience of cities within individual states was mixed as well, as in Florida where Miami and Jacksonville grew while Tampa declined and in California where Los Angeles and San Francisco lost population while San Jose, San Diego, and Sacramento gained.

Some of the increase in city population is a result of the annexation of adjoining areas. The ability of cities to annex varies considerably by region. Between 1960 and 1970, cities in the South and West more frequently extended boundaries to capture population growth than did their Northeastern and Midwestern counterparts (see Table 7). It is not clear whether that pattern persisted in the 1970s.

TABLE 7. PERCENT CHANGE IN POPULATION OF CENTRAL CITIES FROM 1960 TO 1970 DUE TO ANNEXATION, BY REGION

Region	Actual Population Change Including Effects of Annexation	Population Change that Would Have Resulted Without Annexation
Northeast	-1.9	-2.1
Midwest	-0.3	-4.6
South	11.2	3.2
West	18.0	9.9
Total	5.3	0.5

SOURCE: Roger J. Vaughan, Mary Vogel, The Urban Impacts of Federal Policies: Vol. 4, Population and Residential Location, (Santa Monica, California: The Rand Corp., 1979). Original source: U.S. Department of Commerce, Bureau of the Census, Census of Population and Housing: 1970, Table A.

Per-Capita Money Income

Although it is not fully representative of the resources available to support government services, the level of income in a jurisdiction provides at least some measure of the jurisdiction's tax capacity. Further, sluggish growth in per-capita income can make it difficult for jurisdictions to continue supporting ongoing services in the face of rising costs.

In 1969, states in the Northeast had the highest average levels of per-capita money income, while states in the South had the lowest levels. From 1969 to 1975, when national per-capita income increased by more than 59 percent, states in the West experienced the highest average increases and states in the Northeast the lowest. Thus, by 1975, states in the West had the nation's highest average income levels, while states in the South--despite above-average increases--remained the poorest.

The experience of the selected central cities examined was somewhat different. First, as of 1975, average per-capita money income was higher in the Southern, Western, and Midwestern cities examined than in those regions as a whole, whereas the Northeastern central cities examined were generally poorer than the region as a whole. Between 1969 and 1975, per-capita income grew most slowly in Northeastern cities.

Representative Tax Capacity

A third measure of the economic condition of a state and its local jurisdictions is the representative tax capacity, a measure originated by the Advisory Commission on Intergovernmental Relations and developed further at the National Institute of Education. The representative tax system measure estimates how much tax revenue a state and its local jurisdictions would raise if national average rates were applied to seven commonly used tax bases. The taxes used to assess a state area's taxing capacity include sales and gross-receipts taxes, license taxes, individual income taxes, corporate income taxes, property taxes, death and gift taxes, and severance taxes.

In 1977, per-capita tax capacity as measured by the representative tax system indicator ranged from 44 percent above the national average in Alaska to 30 percent below the national average in Mississippi (see Table 8). States with above-average tax capacities were concentrated in the West where 8 of 13 states had above-average capacities. States in the Northeast and South often had capacities below the national average; only 3 out of 9 states in the Northeast and 6 out of 16 states in the South were at or above the national average.

TABLE 8. STATE AND LOCAL GOVERNMENT PER-CAPITA REPRESENTATIVE TAX CAPACITY,[a] BY STATE: SELECTED YEARS, 1962-1977 (U.S. Average = 100)

States	1962	1967	1972	1977
NORTHEAST				
New England				
Connecticut	111	117	112	112
Maine	79	81	84	82
Massachusetts	98	98	98	93
New Hampshire	99	110	115	102
Rhode Island	90	91	88	87
Vermont	81	88	102	91
Mid-Atlantic				
New Jersey	111	107	112	107
New York	119	108	106	95
Pennsylvania	91	91	95	98
MIDWEST				
East North Central				
Illinois	116	114	110	112
Indiana	95	99	97	99
Michigan	101	104	100	104
Ohio	101	100	96	103
Wisconsin	91	94	95	96
West North Central				
Iowa	96	104	99	103
Kansas	103	105	101	102
Minnesota	95	95	97	99
Missouri	96	97	96	94
Nebraska	109	110	106	98
North Dakota	88	92	86	94
South Dakota	90	91	89	87
SOUTH				
South Atlantic				
Delaware	128	123	122	123
Florida	105	104	112	104
Georgia	75	80	93	85

(Continued)

TABLE 8. CONTINUED

States	1962	1967	1972	1977
Maryland	98	101	101	100
North Carolina	74	78	87	83
South Carolina	64	64	74	77
Virginia	86	86	92	90
West Virginia	78	75	81	93
West South Central				
Arkansas	76	77	81	79
Louisiana	84	94	93	104
Texas	98	102	98	103
Oklahoma	94	98	99	113
East South Central				
Alabama	68	70	76	77
Kentucky	76	80	84	87
Mississippi	61	64	71	69
Tennessee	73	78	84	83
WEST				
Mountain				
Arizona	101	95	107	93
Colorado	104	104	106	108
Idaho	93	91	88	88
Montana	107	105	106	101
Nevada	155	171	156	153
New Mexico	98	94	92	97
Utah	95	87	83	89
Wyoming	137	141	125	155
Pacific				
Alaska	88	99	131	144
California	128	124	112	111
Hawaii	90	99	116	107
Oregon	105	106	106	102
Washington	106	112	101	99

SOURCE: Tax Wealth in Fifty States, 1977, (Washington, D.C.: The National Institute of Education, 1979), Table 7, p. 14.

a. The representative tax capacity is a measure of how much revenue a state and its local governments could raise by applying U.S. average rates to seven commonly-used tax bases.

INTERGOVERNMENTAL REVENUE

Intergovernmental transfers augment states' and localities' own-source revenues. According to estimates prepared by the Office of Management and Budget, state and local governments will receive $91 billion in federal aid in fiscal year 1980,[1] some of which is funding for federal programs administered by state and local governments but much of it is funding that directly supports state and local services. In 1978, the volume of federal aid to state and local governments accounted for 22 percent of all state and local general revenues. In addition to the federal aid that goes directly to state and local governments, states pass money--both federal and own-source--through to localities. The combined federal and state intergovernmental transfers to localities accounted for over 40 percent of local government general revenues in the typical state in 1978.[2]

Reliance on intergovernmental aid varies considerably among both states and localities. As of fiscal year 1978, intergovernmental aid to state governments ranged from 22 percent of total general revenues in Indiana and Delaware to 40 percent or more of general revenues in Montana and Vermont (see Table 9). Intergovernmental aid to local governments varied from 25 percent of total local revenues in New Hampshire to more than two-thirds of total local revenues in New Mexico. While nearly all intergovernmental aid received by state governments is provided by the federal government, a large but unmeasurable share of the aid received by local governments is provided by state governments, accounting for much of the variance among localities in their reliance on fund transfers.

SUMMARY

When examining the resources--both own-source and intergovernmental--available to state and local governments, the principal findings are that:

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1. Office of Management and Budget, Budget Review Division, Federal Government Finances, June 1980.

2. U.S. Department of Commerce, Bureau of the Census, Governmental Finances in 1977-78, Table 4.

TABLE 9. INTERGOVERNMENTAL TRANSFERS AS A PERCENT OF TOTAL STATE AND LOCAL GENERAL REVENUE, FISCAL YEAR 1978

State (by Census Region)	Intergovernmental Transfers as Percent of Total General Revenue	
	State Government[a]	Local Governments[b]
NORTHEAST		
New England		
Connecticut	25	31
Maine	33	47
Massachusetts	32	35
New Hampshire	38	25
Rhode Island	31	40
Vermont	40	32
Mid Atlantic		
New Jersey	27	35
New York	33	45
Pennsylvania	27	42
MIDWEST		
East North Central		
Illinois	25	38
Indiana	22	47
Michigan	26	45
Ohio	27	42
Wisconsin	25	53
West North Central		
Iowa	27	45
Kansas	26	31
Minnesota	24	52
Missouri	30	38
Nebraska	28	28
North Dakota	31	45
South Dakota	38	29

(Continued)

TABLE 9. CONTINUED

State (by Census Region)	Intergovernmental Transfers as Percent of Total General Revenue	
	State Government[a]	Local Governments[b]
SOUTH		
South Atlantic		
Delaware	22	59
Florida	25	43
Georgia	32	39
Maryland	25	45
North Carolina	28	59
South Carolina	31	46
Virginia	28	32
West Virginia	33	55
East South Central		
Alabama	33	48
Kentucky	27	55
Mississippi	35	54
Tennessee	32	42
West South Central		
Arkansas	36	51
Louisiana	29	50
Oklahoma	28	47
Texas	25	38
WEST		
Mountain		
Arizona	23	46
Colorado	29	37
Idaho	32	43
Montana	41	39
Nevada	30	36
New Mexico	26	68
Utah	33	47
Wyoming	35	36

(Continued)

TABLE 9. CONTINUED

State (by Census Region)	Intergovernmental Transfers as Percent of Total General Revenue	
	State Government[a]	Local Governments[b]
Pacific		
Alaska	26	44
California	28	43
Hawaii	28	38
Oregon	31	42
Washington	25	44
Median State	28	44
Range	22 - 41	25 - 68

SOURCE: U.S. Department of Commerce, Bureau of the Census, Governmental Finances in 1977-78, Table 5.

a. Includes aid received from federal and local governments.

b. Includes aid received directly from the federal government, aid from the federal government passed through the state, and aid from the state government.

- From 1970 to 1977, forty-seven states experienced average population growth of 7.5 percent, with major cities in those states losing about one percent of their population. The remaining three Northeastern states lost, on average, 1.2 percent of their population, while the major cities in those states lost nearly 9 percent of their population.

- National per-capita income increased 60 percent between 1969 and 1975. As of 1977, Western states had the highest average income levels, while Southern states--despite above average increases--remained the poorest.

- As of 1977, Western states had the most potential tax wealth as measured by a representative-tax-capacity indicator, with eight of thirteen states above the national average. Northeastern and Southern states had the least tax wealth, with only 3 of 9 Northeastern states and 6 of the 16 Southern states having tax capacities greater than the national average.

- State government reliance on intergovernmental aid varied from 22 percent of total general revenues in Indiana and Delaware to over 40 percent in Montana and Vermont as of 1977. Intergovernmental aid to localities ranged from 25 percent of general revenues in New Hampshire to more than two-thirds of total local revenues in New Mexico.

Senator DURENBERGER. The next section of the hearing consists of a panel that we hope will develop more specific issues involved with allocation formulas. We have three witnesses. Robert Rafuse is the Deputy Assistant Secretary for State and Local Finance at the Department of the Treasury. Dr. Duncan is Director of the Office of Federal Statistical Policy and Standards, now located in OMB. And our friend, William Anderson, Director of the General Government Division of the General Accounting Office, is with us again today.

Each gentleman has been involved with formula issues and it is our privilege to receive their testimony this afternoon.

Perhaps we should start with Mr. Rafuse, then Mr. Anderson and last Dr. Duncan.

TESTIMONY OF ROBERT W. RAFUSE, JR., DEPUTY ASSISTANT SECRETARY, TREASURY DEPARTMENT; WILLIAM J. ANDERSON, DIRECTOR, GENERAL GOVERNMENT DIVISION, GENERAL ACCOUNTING OFFICE; AND JOSEPH W. DUNCAN, DIRECTOR, OFFICE OF FEDERAL STATISTICAL POLICY AND STANDARDS, DEPARTMENT OF COMMERCE

Mr. RAFUSE. I welcome the opportunity to appear here this afternoon. I appreciate the very limited time we have and will try to confine my remarks to the core of our statement.

I say it is "our" statement because I would like to raise from the ranks of the anonymous bureaucracy my associates, Bob Aten and Bob Dinkelmeyer, both who are members of the staff of the Office of State and Local Finance of Treasury. They were the primary contributors to the study of the severance tax and revenue sharing that is the subject of my testimony today.

I understand perfectly well the special interest our study holds for you, Senator. I would like to focus my comments specifically on telling you as little about the mechanics and analytical methods used as I believe is absolutely necessary to understand the very limited set of numbers that I can present to you as the results of the study. So I would like to set the stage before I give you the core of the results of our analysis.

I should mention that we are hoping that, with reasonable luck in production, the entire study will be available in a month or so from the Treasury Department.

The basic question we address is how the allocation of payments under the revenue sharing program is likely to differ by 1985 from the allocation in 1980, because of the energy crisis and the oft-noted impacts of that crisis on the yields of the severance taxes that are levied by a handful of States.

In order to address that problem, the obvious prerequisite is a set of forecasts of the numerous variables that enter into the revenue sharing formula. The specific methods that we need for the forecast are briefly noted in the testimony and I won't attempt to explain them now. They were generally the standard methods used in forecasting State and local finance.

The distinctive feature of the analysis is associated with our forecasts of the severance-tax component of State and local tax efforts. The 1980 allocation of revenue sharing payments was based on State and local tax collections in fiscal year 1977. The allocation in 1985, because of a slight acceleration in the reporting of data by the Census Bureau, will be based upon tax collections in fiscal year 1983.

State severance taxes in fiscal 1977 yielded about $2 billion. By 1980, the most recent year for which we have information, these collections had risen to $3.8 billion. For 1983, we have two forecasts of severance taxes.

Our forecast, given the existence of the energy crisis, is about $9.4 billion, which amounts to a nearly fivefold increase since 1977. This is an extraordinary rate of growth, but I would note that by 1983 severance taxes will still account for only about 3 percent of all State and local tax collections.

Without the energy crisis, the forecast which we refer to as a control in our testimony—fiscal 1983 collections—amounts to about $3.3 billion, a little more than a third of the amount that we forecast with the energy crisis. Now a critical element of our analytical effort in arriving at estimates of State and local fiscal tax efforts involves a concept that we refer to as "displacement." The essential notion underlying this is that, in the handful of States that are reaping a bonanza as a result of the energy crisis, it seems to us, conceptually and as a practical matter, that their tax collections are not likely to rise by the full amount of the extraordinary growth in severance-tax yields. Consequently, we introduced into the analysis a step that involves what we call displacement.

I would cite the case of Alaska, which has cut its other taxes as a result of the severance-tax boom in the past few years by the equivalent of approximately 10 percent of the extraordinary, energy-crisis-related increase in severance taxes. In the forecast, we assume 50-percent displacement of the excess yields of severance taxes over the control forecast.

Page 11 of my testimony summarizes the essential conclusions of the analysis expressed as differences between the two allocations that we forecast for 1985 and the actual allocation in 1980. We report these results for three groups of States: a group of eight States that are the primary focus of most of the discussions about severance taxes—the States that export major portions of their energy production; another group of seven States that are classified often as exporting smaller portions of their severance taxes; and all other States.

To simplify the discussion, let me report the major results for two categories—those energy-rich States that are collecting substantial severance taxes and all the other States.

We estimate that, comparing the 1980 revenue sharing allocation with the 1985 allocation, approximately $54 million in payments will be shifted among the three groups of States as a result of all of the developments that are forecast to occur in influencing the two allocations of revenue sharing.

If we focus exclusively on the control forecast of severance-tax collections—that is, if we suppose that there were no energy crisis and there had been, since 1977, no rapid runup in severance tax collections—then the amount reallocated would have been about $33 million. This means, essentially, that about $21 million of the total shift in revenue sharing payments will be accounted for by the energy crisis.

I would like to add one final note with respect to our results. That is that, effectively, the impacts of the energy crisis on the revenue sharing allocation are a matter that largely involves the State of Alaska. More than half of the $21 million shifted, which I mentioned, is a gain by the State of Alaska at the expense of the other States of the Union. So the problem essentially concerns the situation of Alaska. I won't attempt, in this context, to generalize or recommend any policy changes that may deal with that.

Thank you, Senator.

Senator DURENBERGER. Thank you very much.

Mr. Anderson.

Mr. ANDERSON. Good afternoon, Mr. Chairman. I will abbreviate my abbreviated comments if I may.

GAO's purpose here today is just to share with you the results of our work in looking at how successful the general revenue formula has been in reducing fiscal disparities among the States and jurisdictions. We have issued one report on this subject already and do have some other ongoing work.

I can read two paragraphs that will summarize effectively what we have come up with.

As you know, the tiering procedure allocates the State funds for local governments among county areas based on each county's area population, relative income and tax effort. Other things being equal, more funds are allocated to low income county areas. Therefore, a high income community in a low income county area will draw from a larger county area fund and receive more revenue sharing aid compared to a city with the same three formula elements located in a higher income county area, which will have a correspondingly smaller fund. In other words, cities which have high income, compared to their county area, benefit from the tiering procedure while cities with low incomes relative to their county area are penalized.

The county area fund is subsequently broken down into two separate funds for the county government and the county's cities, and a third fund for townships, if any, based on the percentage share of adjusted taxes collected by each of the three types of governments. Because the amounts set-aside for each type of government within the county area are based on their tax collections rather than on the three-factor formula, cities in a county area with higher tax collections than other types of government in the county will obtain more funds than will cities in another county with less tax collections relative to the other governments in their county, even though all cities in both county areas had identical tax efforts.

Thus, for purposes of a split within the counties, tiering rewards governmental types within a State that have higher per capita income, and the higher absolute tax collections normally associated with that condition. That is, cities as a group will get more aid in a particular State than they would under the three-factor formula if the per capita incomes of cities as a group is higher than the per capita incomes of counties in the State.

To summarize our view, although the three-factor formula tends to alleviate fiscal disparities, tiering in many instances produces the opposite result. Upon completion of our analysis we hope to fully and clearly demonstrate the effects of tiering in the mathematical structure of the formula which should reinforce our previous recommendation that tiering be eliminated.

That concludes my remarks, sir.

Senator **DURENBERGER**. Thank you.

Mr. Duncan.

Mr. **DUNCAN**. Thank you, Mr. Chairman. First, I want to say Danuta Emery is with me. As noted on the first page of my testimony, she is the principal investigator of the report which I am going to review.

I, too, will summarize my statement and give you the full statement for the record. I will use only about half a dozen paragraphs.

Basically, I want to cover two broad topics. First, is the role of statistics in the distribution of Federal funds; my paper has some specific examples. Second, I would like to make a proposal to this subcommittee, in my concluding remarks, for a periodic review to insure that data needed for the Federal program operations are available, sound and used properly.

There have been a large number of studies on the use of Federal statistics in various individual programs. Our office last December reported on a study which examined the whole. We tried to find all cases where statistical criteria were used to allocate funds. Our report, which was published in the December 1980 Statistical Reporter, covers the broad spectrum of uses of statistics. As you have already learned in this hearing and others, statistics are used in many categorical and grant programs, and there are a number of problems in these uses.

The data availability and reliability affects allocations, but sometimes the validity needs more attention than it has been given. In my testimony I draw attention to a fact which I call "fragile statistics." By that I mean statistical measures that break down because the statistic is being used in a context that is inconsistent with the phenomena that the statistic is intended to measure. My testimony includes several examples of that improper use of statistics. These relate to a number of problems you have been discussing today.

Almost all of the witnesses have talked about the importance of reviewing the formulas individually, of making sure the data are available and that they are sound. I would simply like to conclude by underscoring the importance of reviewing the use of statistics and formulas in allocation procedures. There is clearly a need for the Congress to examine the mechanisms which are used to distribute the billions of dollars of Federal expenditures which go to individuals, governments, and institutions. In recent years, while the proportion of the budget affected by statistics has grown dramatically, the Congress has not undertaken a systematic review of the technical aspects of the statistical formulas and eligibility criteria which are used.

In many cases, as you know, the Congress lays down a broad strategy. Then there are administrative procedures that are developed by agencies in terms of finding convenient ways to allocate funding. I think it would be very appropriate for Congress to review those administrative procedures, as well as to review those procedures that are in the laws themselves because frequently in the compromising of the congressional decision process funny things happen to the formulas that need to be investigated.

Basically, I believe that the review should include two elements. First, an assessment of the overall performance of the formulas, eligibility criteria, in meeting the goals of these programs. That is, does the formula do what you want it to do?

Second, an evaluation of the reliability or appropriateness of the statistics themselves. Unfortunately, in many cases we have statistics being required that do not exist in valid ways. However, we have to use whatever is available and the concepts and definitions are often inappropriate for the requirement.

I think this hearing is opening up an extraordinarily important topic but it is one that requires sustained followup. My recommendation, Mr. Senator, is that this subcommittee take on that responsibility.

Thank you.

Senator DURENBERGER. Thank you very much.

I have just been sitting here all afternoon getting very discouraged by all the complexity. I started out the day saying I would be glad to take on that responsibility. After 2½ hours, I know it would be worth the effort but I don't known whether I have the capacity, if you will, to undertake it. I suppose, to a degree, I was a little unfair with Ed Harper in trying to force him to acknowledge that the formula allocation system ought to be used in the block grants, right off the bat, as the way to alleviate some of our problems. After listening to all of this testimony, particularly the analysis and all of these studies, it would appear to me that we have very serious problems internally in making good judgments that would go with any kind of formula.

What I heard from all of you about the accuracy of data and statistics, and so forth, leads me to believe that we really ought to take some time to answer the question that you, Dr. Duncan, raise—and I think several other people raise—which is, what is it you want to do, and then, how do you want to go about doing it?

The problem, of course, that we have is that we have substantial sums of money being appropriated to State and local governments in one form or another, relying on a variety of formulas. We made decisions in the Senate Finance Committee a couple weeks ago about medicaid, for example, in which we found we could make a lot of money for the Federal Government by dropping the Federal minimum match and capturing about 12 of the States. That gave us all a good feeling until we went back to find out why those people happened to be the bottom 12. We then found we were using income as a criteria, and income squared. Nobody could answer the question why we were using income squared. That has been raised here today, but 24 Senators from 12 States will be out there ranting and raving, looking like they are not supporting the President.

So, I guess, the purpose of all this is to say that somebody has to take on the challenge and part of this process of redefining Federalism. I hope, since many of us represent various parts of the legislative and executive branches, that this will be a shared responsibility as we go through the whole process.

Bob, let me ask you a question about one of the statistics in your statement. By the way, I want to say that the full statements of all three of the witnesses will be made part of the record. I think it is on page 6 you make assumptions about energy costs with which I find difficulty in agreeing. That is "energy costs will increase at an annual rate of 3.1 percent." We were being very conservative in the Finance Committee, I thought, in using inflation plus 2 percent. I am curious about where you come up with the 3.1 percent.

Mr. RAFUSE. Senator, that is 3 percent plus inflation. So we are being a little looser than the Finance Committee. More pessimistic, I suppose.

Senator DURENBERGER. That is probably a better term. Right?

Now that we have looked at some of the conceptual flaws of the general revenue sharing formula, I wonder, Bill, how confident are you that the three-factor formula will tend to reduce fiscal disparities among local governments?

Mr. ANDERSON. Conceptually, it seems like a good approach once the tiering problem is eliminated, Mr. Chairman.

Senator DURENBERGER. Once we eliminate the tiering problem?

Mr. ANDERSON. Correct.

Senator DURENBERGER. Are you, or is anyone, tracking last year's amendment on the general revenue sharing formula in terms of the exchanging of categorical grants for general revenue sharing money?

Mr. ANDERSON. I am not personally aware of any such effort.

Mr. FASTRUP. We haven't moved forward with that at this time. We are going to wait to see what happens and what the Congress does in terms of the States being included in the next 2 years. We have been tracking the regulations as they have been written but it is not apparent to us that the States are even going to be in the program. So we haven't got anything specific right at the moment.

Senator DURENBERGER. I want to get back to the three-factor formula which we have been talking about in general revenue sharing. Is there any rationale at all for applying that formula to the block grants if we modify it in the way which you have recommended?

Mr. ANDERSON. That would get into the problem of the desirability of trying to achieve equalization as part of the other objectives of a particular grant, Mr. Chairman.

I am thinking of the education grant which is largely targeted at the disadvantaged children, and which really may or may not correlate with the fiscal health of communities. I think it would have to be very carefully tailored on each and every grant.

To the extent that you would want to introduce equalization in addition to the other objectives of the grant, this certainly offers a good way to do it.

Senator DURENBERGER. Thank you.

Mr. Duncan, you spent some time in your prepared statement talking about unemployment data as a reliable measure of fiscal distress. Could you elaborate on that a little bit since we spend a lot of time using it as a formula for special revenue sharing and other measures?

Mr. DUNCAN. Yes, Mr. Chairman. Certainly the unemployment data, as basically designed, are a very good measure of the unemployment condition in the country. But the national survey that is undertaken as reported every month is designed primarily to give national level estimates. It is also designed by augmented sampling to give, on an annual basis, State level estimates.

The problems we have with the unemployment estimates is that we are forcing the Government to apply these down to very small areas.

The Bureau of Labor Statistics has what affectionately is called the 70-step method, which steps down the national estimate using items such as the number of people receiving unemployment compensation, the character of the industry and a number of other factors—many of them derived from the previous census which, of course, gets very out of date.

So the result is—as the late Julius Shiskin, former Commissioner of Labor Statistics said in testimony several years ago—that the very small area unemployment rate is "basically a series of random numbers."

In other words, the national program does not measure unemployment at the local level. That is an excellent example of what I am speaking about, where we misuse these statistics. The basic unemployment series has recently been reviewed by the Levitan Commission and has been found to be conceptually sound, but it only yields national and State estimates.

Senator DURENBERGER. Talk to us a little bit about the use of per capita income data. How is it compiled and what are some of the problems that we have in using per capita income?

Mr. DUNCAN. Well, the Bureau of Economic Analysis, as you know, creates personal income estimates on an annual basis which are then simply divided by the annual population estimates. There are really two problems. The first is that we don't have the same type of records at the State level that we have at the national level. Therefore, we have to make estimates of personal income by State, using administrative records of things like wages and salaries paid.

Those are fairly reliable statistics but, as you know, there is emerging what we call the "hidden economy." That is, a lot of transactions are not recorded, such as cash and barter transactions. To the extent that those have regional variations, for example, to the extent that they are based on illegal immigrants or migrant workers that really aren't tracked by any other system, the personal income by State is out of line.

The second part is the population estimate. The population estimate is derived by taking the census and adding in the births and deaths as reported in administrative records, and then estimating migration from one area to another.

Now, we really don't keep track of our people in any administrative fashion so we estimate migration by comparing tax records from two periods. We do it once every 3 years actually, and assume that the change of addresses on tax records is an approximation for the migration of people. I think you and I would agree there is some possibility of error in that estimate. So, obviously, personal income per capita as a measure suffers from both estimates—personal income and population.

Senator DURENBERGER. Can you generalize, at all, about which type of data is particularly sensitive to statistical errors, and for which major formulas does this pose a special problem?

Mr. **Duncan**. I think the most important generalization that I would make in a very short period is that when you want to get small area estimates of any kind, you are into "fragile statistics." Most of our measures are designed to be national or State measures.

Really the only major program we have that gets into small area data is the census, and, of course, that does give us a good estimate and details at the local area. But, as you know, that information deteriorates over time.

So right now we are using data that are 11 years old because the 1980 census results are not yet out, for most characteristics. Only the total counts are available.

Senator **Durenberger**. Thank you all for your testimony. As I indicated, your statements will be made part of the record.

We are indebted to you for your challenge. Thank you very much.

[The prepared statements, with attachments, of Mr. Rafuse, Mr. Anderson, and Mr. Duncan follow:]

FOR RELEASE ON DELIVERY
EXPECTED AT 1:30 P.M.
Wednesday, May 13, 1981

STATEMENT OF ROBERT W. RAFUSE, JR., DEPUTY ASSISTANT SECRETARY (STATE AND LOCAL FINANCE), U.S. DEPARTMENT OF THE TREASURY BEFORE THE SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS OF THE SENATE COMMITTEE ON GOVERNMENTAL AFFAIRS

During the debate on the recent extension of the Revenue Sharing Program, which was approved by the Congress in December 1980, the allocation of payments among the States was not initially an issue. This overlooked a rapidly developing concern that first achieved national attention during the debate on the windfall profit tax in December 1979.

The energy crisis ignited by OPEC in 1973 had, in the ensuing six years, produced soaring oil prices in the world market. This, coupled with the decision to phase-out controls on the price of oil produced in the U.S., was resulting in rapidly rising prices of all forms of energy. The rising prices were recognized, appropriately, as providing essential incentives for conservation and for major efforts to increase production from domestic sources.

An ancillary consequence of the soaring energy prices, however, received little attention until late 1979. This is their impact on the yields of State taxes on the production of crude oil, natural gas, and coal--the so-called energy-related severance taxes.[1]

The problem is that energy resources are concentrated in a handful of States, which stand to realize potentially large increases in tax revenues as a result of the energy crisis. Moreover, a few Federal grant programs provide for the allocation of payments in direct relation to the tax effort of State-local governments, currently defined to include collections of severance taxes.

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[1] Severance taxes on the harvesting of renewable natural resources, such as timber, and the extraction of other types of resources, such as gravel and iron ore, are not at issue. All further references to severance taxes in this testimony are to those on crude oil, natural gas, and coal. The rates of these taxes differ from resource to resource and among the States. Most of the taxes are on a percentage-of-value--or *ad valorem*--basis, but the severance taxes on coal and natural gas of a few States are based on the quantity produced rather than the value of production.

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The most important such program is Revenue Sharing, and the debate on its renewal was about to get under way just as the severance-tax issue was first raised. The concern, as it was articulated in the renewal debate, was that the rapidly rising yields of severance taxes would vastly increase tax effort in the energy-producing States. The result, as the argument went, would be that the entire Revenue Sharing allocation would be tilted dramatically in favor of those States, which are already benefiting handsomely from the booming yields of their severance taxes.

Pursuant to this concern, the Treasury Department received requests from the staff of several Congressional committees for information on the likely consequences of the outlook for soaring severance-tax yields for Revenue Sharing. Accordingly, in March 1980, the study whose results are summarized in this testimony today was initiated.[2] Because a five-year extension of the Program--through 1985--was then being discussed, the objective of the study was defined as determination of the effects of the energy crisis on the allocation of payments by the final year of that renewal period.

The Interstate Allocation Formula

Since the Revenue Sharing Program was enacted in 1972, payments have been allocated among the States by a combination of two formulas: the three-factor formula initially approved by the Senate, and the five-factor formula initially approved by the House of Representatives.[3] Each State receives the larger of the amounts yielded by the two formulas, scaled to the total appropriation to be distributed.

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[2] A summary of the preliminary findings of the study was circulated informally last summer, and a set of tables showing the results of a later version of the study was placed in the Congressional Record during the Senate debate last December. The study has since been completely reworked, but the major conclusions do not differ significantly from those released earlier.

[3] The interstate formula distributes the total funds available among State areas (the 50 States and the District of Columbia). All references to "States" in this testimony are to the 51 State areas. Payments appropriated for a given Federal fiscal year are made in four equal, quarterly installments in January, April, July, and October of the calendar year following the beginning of the Federal fiscal year on October 1. References to Revenue Sharing payments in this testimony in, say, 1980 are to payments appropriated for FY 1980.

The three-factor formula allocates an amount to each State that reflects its population multiplied by its relative-income factor multiplied by its general-tax-effort factor, divided by the sum of the products for all States. The resulting ratio defines a State's share of the total to be allocated.

The five-factor formula is additive. That is, 22 percent of the appropriation is distributed in proportion to each State's share of the national population, 22 percent in proportion to each State's share of the nation's urbanized population, and 22 percent is distributed based on each State's population inversely weighted by its per capita income as a share of the national sum of such products.

Half of the remaining 34 percent of the national total is distributed in proportion to each State's share of total State individual income tax amounts.[4] The other half is distributed in proportion to each State's share of the national total of State general-tax-effort amounts.

The general-tax-effort factor of a State is defined as total State and local tax collections divided by the State's personal income. A State's general-tax-effort amount is defined as its general-tax-effort factor multiplied by its total State and local tax collections. The relative-income factor is a State's per capita income divided into national per capita income. Per capita income is Census money income.

Fiscal Capacity

In the Revenue Sharing formula, a State's per capita income--compared with that of the nation--serves as a measure of its relative fiscal capacity. For most State and local taxes under most circumstances, per capita income is a reasonably satisfactory measure of potential revenue-raising ability. Tax yields are generally dependent, directly or indirectly, on the income of the residents of the taxing jurisdiction.

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[4] A State's income tax amount is defined as 15 percent of the yield of its individual income tax. However, the amount may not be less than 1 percent nor more than 6 percent of the Federal income tax liabilities attributable to the State. In 1980, eight States with little or no income tax collections were assigned the 1-percent minimum; three States were constrained by the 6-percent maximum.

However, the link between the availability of natural resources and the income of a State or locality is tenuous at best. The exploitation of such resources generates a potential source of revenues, but the demand for energy production depends largely upon national rather than State markets. This is one of the reasons it has been argued that the measure of fiscal capacity in the Revenue Sharing formula is imperfect. That is, it does not allow for the potential yield of severance taxes in the minority of States that are exceptionally endowed with natural resources, whose exploitation creates an unusually lucrative base for taxation.

Tax Effort

Normally, an increase in the ratio of tax collections to income--the traditional measure of tax effort--implies that higher taxes are being paid by the residents of a jurisdiction. For example, an increase in the rate(s) of a State's individual income tax raises tax effort in the Revenue Sharing formula and also increases the real tax burden on the residents of the State.

The tax-effort variable in the Revenue Sharing formula is widely recognized as being an imperfect measure of the relative tax burden borne by the residents of a State or locality. The primary imperfection derives from the phenomenon of "exporting," that is, the shifting of the burden of a tax to individuals who are not residents of the jurisdiction levying the tax.

Most taxes used by State and local governments are exported under certain circumstances. For example, sales taxes are paid by non-resident tourists and conventioners in such States as Nevada and such cities as New York, whose economies are heavily dependent on visitor spending. Property taxes on manufacturing plants are exported, to the extent that market conditions permit the taxes to be shifted and production is sold to out-of-area customers. Although tax exporting is a widespread phenomenon, the proportions of most yields that are exported are relatively modest. Moreover, much of the exporting washes out among jurisdictions--New Yorkers visit Las Vegas, and Nevadans visit New York--perhaps more so among States than among localities.

In the case of the severance tax on energy production, however, it is commonly thought that a major portion of the yield is effectively paid by energy consumers other than residents of the State levying the tax. This is said to occur because the tax is believed to be paid by consumers, and most energy is not sold to the residents of the States where the coal, natural gas, or crude oil is produced. To the extent that such exporting occurs, tax effort may increase without any rise in the tax burden on a State's residents.

However, crude oil prices are set in the international market: factors other than severance taxes are responsible for the rapidly rising price of crude oil. Domestic producers are effectively price takers and cannot forward shift the severance taxes they pay. As a consequence, State severance taxes on crude oil are generally paid by energy producers in the form of reduced profits. A portion of the tax may be shifted "backward," as reduced employee compensation in energy-producing firms, but this is not likely to be significant.

Although natural gas prices are controlled by the National Gas Policy Act, Section 110 allows increases in severance taxes to be added to controlled prices. Consequently, severance taxes on natural gas are probably best viewed as shifted to consumers.

The existence of a nationwide market for coal, together with the absence of severance taxes in a number of major coal-producing States, tends to prevent producers from shifting severance taxes on coal to consumers. For these reasons, only a small proportion of all severance taxes on energy appears to be shifted to consumers.

Moreover, even if a portion of the severance tax is shifted to consumers, the entire amount shifted is not exported by the producer States. These States also consume energy. Thus the shifting of severance taxes to consumers outside the energy-rich States is almost certainly not the problem it at first appears to be.

In fact, most of the burdens of severance taxes are probably borne by the owners of energy companies in the form of smaller dividends and capital gains than they would have received in the absence of the taxes. The geographical incidence of these burdens clearly depends upon the distribution of the stockholders in energy-producing companies. Little information is readily available on this, but it seems reasonable to suppose that most live elsewhere than in the producing States. Moreover, severance taxes on crude oil are also shifted to the Federal government through their deductibility in the calculation of a firm's liability for the windfall profit tax. To the extent that this occurs, the burdens fall upon taxpayers throughout the nation.

For all these reasons, it appears that a large portion of severance taxes is exported, if not for the reason commonly believed, and that their unqualified inclusion in a measure of tax effort is of questionable validity.

The Approach of the Treasury Study

The yields of severance taxes nearly doubled between FY 1977--the tax collections that entered the calculation of the 1980 Revenue Sharing allocation among the States--and FY 1980. Comparable, or even more rapid, growth is commonly anticipated by FY 1983--the tax collections that will influence the allocation of Revenue Sharing payments in 1985. The basic issue addressed by the Treasury study discussed in this testimony is how the Revenue Sharing allocation in 1985 is likely to differ from the one that would have prevailed in the absence of the energy crisis that is responsible for the extraordinarily rapid growth in severance tax revenues, if the current formula were to remain in effect.

The first step is to develop two forecasts of the yields of severance taxes in each State in FY 1983. The objective is to distinguish the effects on severance-tax yields of the energy crisis--the price explosion in crude oil and natural gas, soaring crude-oil production in Alaska, and the expected boom in coal production--from the increases that would have taken place in the absence of the crisis.

The first set of forecasts may be referred to as the control. This is an estimate for each State of the yield of its severance taxes in FY 1983 had the energy crisis disappeared in 1976 or 1977, as so many Americans apparently believed at the time to have happened. The second set of forecasts comprehends the total yield of each State's severance taxes in FY 1983, given conditions actually expected to prevail.

The control forecast is derived on the basis of an estimate of the relationship between rising severance-tax yields and growth in the gross national product in years since 1962 other than those directly affected by the energy crisis. This relationship assumes that severance-tax yields rose during the period in a crude functional relationship to the overall performance of the economy, and that the States' severance-tax statutes changed only insignificantly during the period. The estimated relationship is that the tax yields rose roughly 0.8 percent for every 1-percent increase in the GNP. Given this relationship, the estimates of severance-tax yields in FY 1983 are calculated from forecasts of the GNP.

The estimates of severance-tax collections in FY 1983, given the energy crisis, are derived by forecasting production in each State by type of energy--coal, crude oil, and natural gas. In States where the severance tax is based on the value of production, forecasts of prices are also required. The pivotal assumption implicit in the price forecasts is that the price of imported crude oil in constant dollars will rise at an average annual rate of approximately 3 percent. The forecast of the appropriate tax base is then multiplied by the 1980 tax rate to arrive at an estimate of severance-tax yields in each State.

In addition to the yields of severance taxes in FY 1983, forecasts of the other formula factors that enter into the calculation of the Revenue Sharing allocation in 1985 are required. Shown in parentheses for each factor in the following list is the year for which data are needed to calculate the allocation.

-- Forecasts of population (1983) and personal income (1982) by State are taken from the State and Area Forecasting Service of Data Resources, Inc. (DRI).

-- All other State-local tax collections (FY 1983) are forecast by State on the basis of the previously mentioned forecasts of personal income and a set of income elasticities for five groups of taxes:

  - personal income taxes: 1.6,
  - corporate income taxes: 1.2,
  - general sales taxes: 1.1,
  - selective sales taxes: 0.6, and
  - and all other taxes: 0.9.

  An income elasticity expresses the association, usually derived from analysis of historical data, between a change in personal income and the automatic change in the yield of a tax. For example, a 10-percent increase in personal income typically raises collections from a general sales tax by about 11 percent. The income elasticity of such taxes, therefore, is 1.1. The forecasts, based on actual collections in FY 1979, assume that the tax laws in effect in each State in FY 1979 do not change during the forecast period.

-- Forecasts of per capita money income (1981) are derived from the DRI personal income forecasts using the actual ratio between the two measures in each State in 1978.

-- Urbanized population (1980) estimates are calculated by applying the 1970 Census ratio of urbanized population in each State to its 1980 population.

-- Federal income taxes (1982) are forecast using actual liabilities by State in 1978, forecasts of State personal income in 1982, and an income elasticity of 1.3; the results are scaled to an official Treasury forecast of total liabilities in 1982.

Changes in population, personal income, and per capita income are certain to have substantial consequences for the Revenue Sharing allocation between 1980 and 1985.[5] Therefore, the cornerstone of the analysis is a forecast of the 1985 allocation that abstracts from the effects of the energy crisis on severance-tax yields. That forecast is called the base case, which includes the control forecast of the yields of energy-related severance taxes.

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[5] The energy crisis will surely affect State population and income trends during the period, and a fully refined analysis of the impacts of the crisis on the Revenue Sharing allocation should take these differential consequences into account. Unfortunately, good estimates of with-and-without scenarios involving population and income at the State level are not available, and the limited resources available for this study precluded an effort to develop such forecasts. Consequently, the only variation in the analysis reflecting the impacts of the energy crisis involves the severance-tax forecasts themselves. This problem is probably not serious enough to call into question the basic findings of the study.

To compare with the base-case forecast of the allocation, three "displacement" forecasts of the 1985 Revenue Sharing allocation are also carried out. Displacement refers to the fiscal response of a State to the large increase in the yields of its severance taxes as a result of the energy crisis. The premise of these forecasts is that not all crisis-related increases in tax revenue are likely to go into fund balances or to be appropriated for expenditure increases. Some portion will be used to reduce State taxes--probably other taxes, but reductions in severance taxes are not inconceivable. Each displacement forecast allows for a different proportion--25 percent, 50 percent, or 75 percent--of the crisis-induced rise in severance-tax yields to be set aside by a State for tax reduction.

The displacement forecasts are calculated as follows. The forecast of the yields of all State and local taxes but severance taxes in FY 1983 in a State are increased by the total forecast of the yields of energy-related severance taxes in that State. To account for the responses of the State to the "extraordinary" component of the growth in severance-tax yields since FY 1977, the resulting forecast of total State and local tax collections in the State is then decreased by 25-percent, 50-percent, or 75-percent of the amount by which the forecast of total severance-tax collections exceeds the control forecast.

Results of the Study

Results are reported here only for the base case and the 50-percent-displacement case. The results for the other two cases bear sufficiently predictable relationships to the 50-percent case not to warrant consideration in this testimony.[6] The two forecasts of the Revenue Sharing allocation in 1985 are designed to isolate the effects on the interstate allocation of the extraordinary increases in severance-tax collections between FY 1977 and FY 1983 resulting from the energy crisis.

The results of the analysis are summarized in Table 1 for three groups of States: the energy-exporting, the other energy-rich, and all other. The eight energy-exporting States produce and export substantial amounts of coal, crude oil, or natural gas.

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[6] The gains of the States benefiting substantially from the energy crisis are relatively larger if 25-percent displacement is assumed and smaller if 75-percent displacement is assumed.

TABLE 1

COMPARISON OF INTERSTATE REVENUE SHARING ALLOCATIONS: ACTUAL IN 1975 AND 1980 AND FORECAST ALLOCATIONS FOR 1985 (millions)

	Actual[a]		1985 Forecasts		Changes in Allocations				Percentage Changes in Allocations			
	1975 (1)	1980 (2)	Base Case (3)	50% Dis- placement (4)	Actual 1975 to Actual 1980 (5)	Actual 1980 to 1985 Base Case (6)	Actual 1980 to 1985 50% Dis- placement (7)	1985 Base-Case to 50% Displace- ment (8)	Actual 1975 to Actual 1980 (9)	Actual 1980 to 1985 Base Case (10)	Actual 1980 to 1985 50% Dis- placement (11)	1985 Base-Case to 50% Displace- ment (12)
U.S. Total	$4,566.7	$4,566.7	$4,566.7	$4,566.7	-	-	-	-	-	-	-	-
8 Energy Exporting States[b]	506.5	507.7	515.4	536.3	$ 1.2	$ 7.7	$28.7	$20.9	0.2%	1.5%	5.6%	4.1%
7 Other Energy-Rich States[c]	598.3	579.3	604.6	605.0	(19.0)	25.3	25.7	.4	(3.2)	4.4	4.4	.1
All Other States	3,461.9	3,479.7	3,446.6	3,425.3	17.8	(33.0)	(54.3)	(21.3)	.5	(1.9)	(1.6)	(.6)

Note: Detail may not add to totals because of rounding.

[a] The 1975 allocation was $6.2 billion to State and local governments and the 1980 allocation was $6.9 billion. The 1975 and 1980 allocations shown are scaled to distribute a total of $4,566.7 million so that the earlier allocations are comparable with the 1985 forecasts. Also, the noncontinuous State adjustments for Alaska and Hawaii are excluded from the allocations, as these were dropped from the Act in 1980.

[b] Alaska, Kentucky, Louisiana, Montana, New Mexico, Oklahoma, Texas, and Wyoming.

[c] Alabama, Arkansas, Colorado, Florida, Michigan, Mississippi, and North Dakota.

Source: Actual 1975 and 1980 allocations from the Office of Revenue Sharing, U.S. Department of the Treasury.

They also collect substantial amounts of severance taxes. The seven other energy-rich States are those with significant energy production that also collect major amounts of severance taxes. The "all-other" category includes a number of energy-producing States that collect little or no severance taxes and the energy-poor States. Of the $3.8 billion in energy-related severance taxes collected in FY 1980, the eight energy-exporting States accounted for nearly 93 percent. The seven other energy-rich States with significant severance taxes collected almost 7 percent.

The differences between the actual allocation in 1980 and the displacement forecast for 1985, shown in column 7 of Table 1, reveal the overall extent to which the Revenue Sharing allocation is likely to change during the period.

The differences between the actual allocation in 1980 and the base-case allocation in 1985 (column 6) provide estimates of the effects of all factors other than the energy crisis on the Revenue Sharing allocation between 1980 and 1985.

The differences between the two forecast allocations, shown in column 8, provide estimates of the net effects of the energy crisis on the Revenue Sharing allocation in 1985.

Finally, for comparison with the 1980-85 changes, the differences between the 1975 and the 1980 Revenue Sharing allocations are presented in column 5. These provide perspective on the relative magnitudes of the forecast changes in the allocation between 1980 and 1985.

Because the same total amount of Revenue Sharing ($4.567 billion, the current appropriation) is assumed to be allocated in each year, the changes for the three groups of States sum to zero for each period.

The major results of the study are:

1. By FY 1983, energy-related severance taxes are likely to yield about $9.4 billion, up from $2.0 billion in FY 1977 and $3.8 billion in FY 1980.

2. In the absence of the energy crisis, severance-tax yields in FY 1983 would have been about $3.3 billion.

3. Therefore, about $6.1 billion of the increase in severance-tax yields between FY 1977 and FY 1983 is attributable to the energy crisis.

4. Economic growth and inflation are likely to add substantially to the total tax revenues of State and local governments, which will rise from $175 billion in FY 1977 to $328 billion in

FY 1983. Thus the increase in severance-tax yields as a result of the energy crisis will account for slightly less than 4 percent of the total growth in State-local tax revenues during the period.

5. Approximately $54.3 million of Revenue Sharing payments will be shifted among the three groups of States between 1980 and 1985. The two groups of energy-rich States will gain this amount at the expense of the all-other group.

6. However, despite the surge in severance-tax revenues, most of the shift in the Revenue Sharing allocation is attributable to factors other than the energy crisis. The 15 energy-rich States would have received about $33.0 million more in 1985, in the absence of the crisis, than they did in 1980. This represents a 3-percent increase in payments to the energy States, and a less-than 1-percent decrease for all the other States.

7. Therefore, the remaining $21.3 million in gains of the energy States between 1980 and 1985 is attributable to the energy crisis. These gains are, of course, at the expense of the other States.

The discussion so far addresses the effects of the energy crisis only on groups of States. In fact, one State (Alaska) accounts for more than 50 percent of the total gains realized by the group of 15 energy States as a result of the energy crisis. Further light may be shed on the problem by considering the specific case of Alaska in some detail.

Alaska is widely known to be reaping a fiscal bonanza from the energy crisis. The bonanza includes a very large relative increase in the State's Revenue Sharing payment by 1985.

Given a $4.567 billion allocation, and no adjustment for noncontiguous States, Alaska would have received $13.2 million in 1980. In the base case, Alaska's allocation falls to $12.4 million in 1985, a decline of $0.8 million. Allowing for the energy crisis and 50-percent displacement,[7] Alaska's Revenue Sharing allocation will be $23.1 million in 1985, an increase of $9.9 million, 75 percent, over its actual payment in 1980. Thus the energy crisis will account for $10.7 million (more than 46 percent) of Alaska's allocation in 1985.[8]

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[7] Alaska has already enacted reductions in its taxes by an amount equivalent to 11-percent displacement by FY 1983. These reductions are viewed in this study as an early instance of the tax displacement eventually anticipated from all the severance-tax States.

At least one possible mitigating consideration bearing on the conclusions to be drawn from these findings with respect to Alaska deserves mention. A substantial share of the growth in Alaska's severance-tax yields is attributable to production increases rather than price increases. Among the other energy-rich States, price increases account for almost all the revenue gains from severance taxes. Only in Wyoming do production increases account for a major share of the booming tax yields. At a time when increased domestic production of energy is a national objective of high priority, it may be difficult to object to gains in severance tax yields that result from growth in production.

By 1985, the consequences of the energy crisis for the tax data used to calculate Revenue Sharing payments are likely to shift $21.3 million. This represents less than 0.5 percent of the $4.567 billion to be allocated to localities. To provide some perspective on the magnitude of this shift, it can be compared with the shifts of funds that are estimated to be associated with a variety of proposals for formula modifications that were considered by the Congress last year during the renewal debate:[9]

- "detiering" the allocation procedures, discussed at these hearings by the General Accounting Office, would shift about $135 million;
- schemes for scaling-back payments to wealthy jurisdictions would shift $40 to $60 million;
- raising the maximum per capita grant that a jurisdiction can receive from 145 percent to 175 percent of the State average would shift approximately $75 million; and
- lowering the minimum guaranteed per capita grant a jurisdiction can receive from 20 percent to 10 percent of State average would shift roughly $60 million.

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[8] The second largest relative impact of the energy crisis on 1985 payments occurs in Wyoming, where the crisis gain will amount to 16 percent of its 1985 payment ($1.9 million, or less than 9 percent of the total gain to the energy-rich States). In no other energy State does the crisis gain account for more than 4.5 percent of its 1985 payment.

[9] These estimates are based on data used to calculate the 1979 and 1980 allocations. It is unlikely that they would be substantially different for later periods. In contrast to the shifts considered in this testimony, the estimates are for payments moved among localities, and not--as in the present context--among States.

This suggests merely that there is a wide variety of issues involving the allocation of Revenue Sharing funds, most of which involve shifts far larger than those involved in the impacts of the energy crisis. In about a year and a half, the Congress will be considering the future of Revenue Sharing beyond FY 1983. This will provide a timely opportunity to examine whether and how the allocation of Revenue Sharing funds should be modified. This question may then take on far greater significance than it has during previous debates about the Program's renewal.

Technical issues such as those related to the allocation of Revenue Sharing funds could be ignored when overall levels of public sector resources were on the rise. However, we are now entering an era when growth in the public sector is likely to be the exception rather than the rule. In many cases, it will be possible to make prudent adjustments so that truly national policy objectives can be achieved with the resources available. This effort will be frustrated if important issues become vehicles for sectional or regional disputes. What is required is solid information, careful analysis, and reasoned judgments. These hearings mark a useful beginning of the required reappraisal of national policy, and can help set the stage for what are likely to be some of the central issues of the 1980's.

PREPARED STATEMENT OF WILLIAM J. ANDERSON

Mr. Chairman, we are pleased to appear today to discuss our work on the revenue sharing formula and its relationship to local government fiscal disparities.

One of the many objectives associated with the general revenue sharing program when it was enacted in 1972 was to help reduce fiscal disparities by allocating more revenue sharing funds to those communities making the greatest effort to help themselves relative to their income. If two communities were making the same tax effort, i.e., taxing the same percentage of their income, the poorer of the two would receive more revenue sharing aid.

The formula used for allocating revenue sharing funds to local governments uses three factors--population, relative income, and tax effort. By measuring taxes collected in relation to the personal income of its residents, the tax effort factor of the formula measures a jurisdiction's effort to help itself. The relative income factor of the formula adjusts for the fact that identical levels of tax effort would enable a higher income community to purchase more public services. This factor serves to give less weight to the tax effort of high income communities and more weight to the tax effort of low income communities, thereby adjusting for the revenue raising advantage of higher income communities. Consequently, the three factor formula, on a per capita basis, would tend to reduce fiscal disparities among local governments.

In March 1980, the Comptroller General testified before this Subcommittee and expressed our view that the three factor formula was conceptually sound from the standpoint of reducing fiscal disparities, but that the geographic tiering procedures used in the allocation process resulted in widespread inequities in revenue sharing payments. Our work had shown that, in many instances, jurisdictions in the same State with higher incomes and lower tax efforts received higher revenue sharing payments than lower income, higher tax effort jurisdictions, thus aggravating, rather than alleviating, existing fiscal disparities.

Last year, during Congressional deliberations on renewal of the revenue sharing program, both we and the Carter Administration recommended that the tiering process be eliminated. This could be accomplished by simply applying the three factor formula directly to all units of local government within each State. While detiering would correct identified inequities and result in a better targeting of funds to needy communities, it produced seemingly contradictory shifts in funds which at the time were not well understood. In some States, detiering shifted funds from city to county governments while in other States the reverse occurred. Similarly, in some States townships gained at the expense of counties, while in other States the reverse occurred.

We are currently making a further analysis of the formula. Our analysis is incomplete at this time in that our preliminary observations and methodological approaches and assumptions have not been subjected to necessary external peer review for validation. We believe, however, that we have identified the cause of the funding shifts.

It appears that the geographic tiering procedure has the effect of introducing a fourth factor into the formula. This fourth factor measures the income differences between localities and their surrounding counties. The result is that more revenue sharing aid is allocated to jurisdictions with high per capita income compared to the remainder of the county in which they are located. Furthermore, the mathematical structure of the formula is such that the fourth factor, which we have called the income disparity factor, receives double weight. It has twice the importance of the three factors which the Congress specifically included in the formula.

The fourth factor appears when the county area allocation is subdivided into separate funds for cities, townships, and the county government. If there is a difference in incomes between cities and the surrounding county, then given the relative tax efforts of the cities, townships, and county government, the higher income group will collect the largest percentage of county area taxes and receive a larger share of the county area allocation. Conversely, the low income group will collect the smallest share of county area taxes and therefore receive a smaller share of the county area allocation.

A detailed explanation of the tiering process and how the income disparity factor is introduced into the allocation formula is contained in attachment I to our statement.

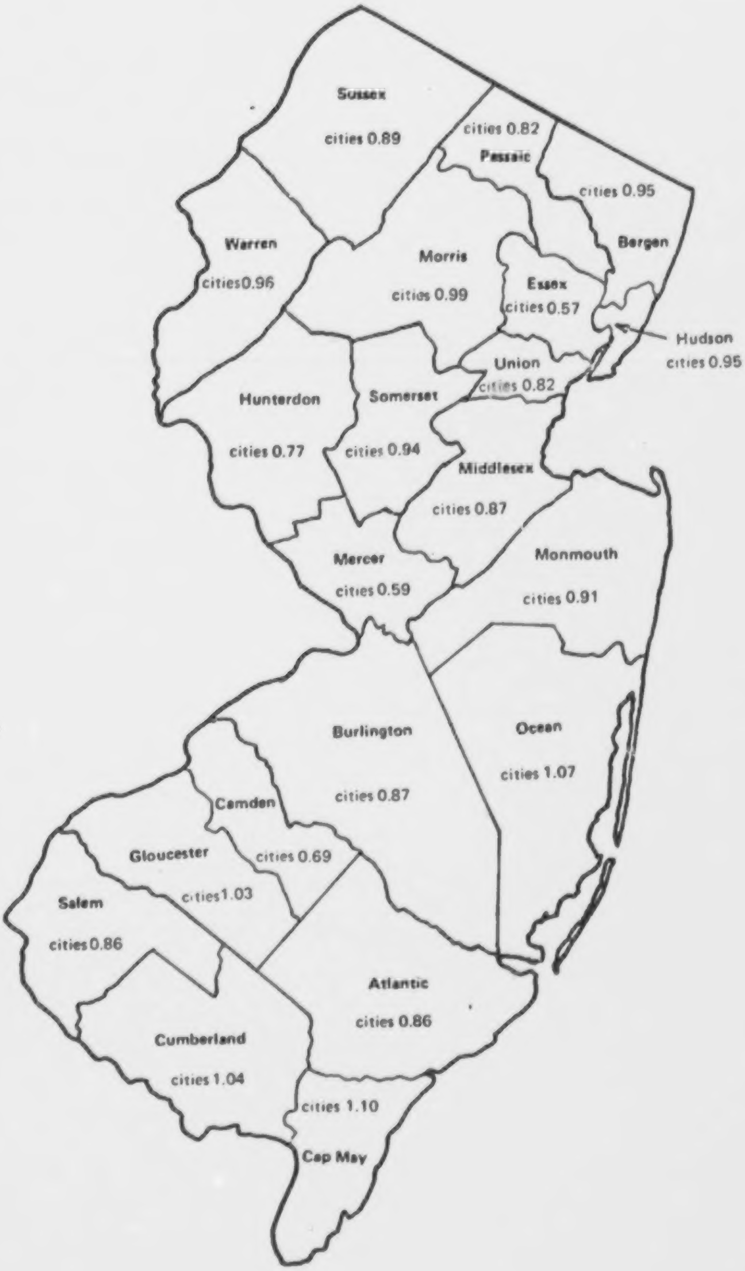
The income disparity factor creates inequities among cities located in different counties

I wish to emphasize that the income disparity factor serves, in many instances, to increase fiscal disparities among governments located in different counties. This occurs because the disparity factor has the effect of taking each city's allocation based on the city's population, relative income, and tax effort and adjusting the allocation upward if the city is located in a county where the average income of the county's cities is higher than the county area per capita income. Similarly, a city's allocation is adjusted downward if the city is located in a county where the average income of the county's cities is below the per capita income of the surrounding county area. Therefore, two cities with the same relative income and tax effort factors can receive very different per capita revenue sharing allocations if they are located in counties with different income disparity factors.

The effects of the fourth factor can be illustrated by revenue sharing allocations in New Jersey, based on entitlement period 10 (October 1, 1978 to September 30, 1979). On the map for New Jersey shown on page 5 we have listed the income disparity factor for each county. For example, the cities in Essex County receive only $0.57 of each dollar that would be allocated to them based on their individual populations, relative incomes, and tax efforts. In neighboring Morris County, cities receive $0.99 on the dollar. The reason for this significant difference is because Newark's extremely low per capita income makes the

EXHIBIT A

INCOME DISPARITY FACTOR FOR CITIES IN NEW JERSEY


Sussex
cities 0.89
cities 0.82
Passaic
cities 0.95
Bergen
Warren
cities 0.96
Morris
cities 0.99
Essex
cities 0.57
Hudson
cities 0.95
Union
cities 0.82
Hunterdon
cities 0.77
Somerset
cities 0.94
Middlesex
cities 0.87
Mercer
cities 0.59
Monmouth
cities 0.91
Burlington
cities 0.87
Ocean
cities 1.07
Camden
cities 0.69
Gloucester
cities 1.03
Salem
cities 0.86
Atlantic
cities 0.86
Cumberland
cities 1.04
cities 1.10
Cap May

average income of Essex County cities very low compared to the entire county. The fourth factor consequently penalizes every city in the county by adjusting their allocation downward. Thus, when we compare the city of Orange in Essex County with the city of Riverdale located in Morris County, Riverdale's per capita revenue sharing allocation is 30 percent higher even though its per capita income is 7 percent higher and its tax effort is 20 percent less than Orange's.

These kinds of inequities are reproduced in every State except Hawaii, which has only three eligible cities. Several examples of inequities from New Jersey, North Carolina, and Minnesota are included in attachment II to our statement. The greatest inequities occur in the States which have the greatest income disparities between cities and their surrounding counties. Allocations for townships are similarly affected.

The income disparity factor also creates inequities between the different government types

If per capita incomes differ between the different government types within a state, the double weighted income disparity factor also serves to allocate more revenue sharing aid to the governmental type which has the higher per capita income. This is an amount over and above what they would receive based on the three factor formula without the tiering process.

This can be illustrated by again referring to the map of New Jersey shown on page 5. Earlier I noted that Essex County cities had a disparity factor of $0.57, indicating that their per capita income (as a group) was well below the average income of the county. As shown on the map, of the 21 New Jersey counties there are only 4 where the average income of cities exceeds the average income of their respective counties. In other words, the predominant pattern in New Jersey is for a disproportionate number of low income people to be located in the cities. Because the average income of New Jersey cities is low, the income disparity factor serves to penalize them. In entitlement period 10, New Jersey cities received about $6.1 million less than they would have received had the three factor formula been applied directly to all units of government. This pattern prevails in all states where urban poverty is the predominant pattern.

In several other States, primarily in the South and Midwest, low income households are predominantly located outside of cities in unincorporated county areas or rural townships. For example, Mr. Chairman, in your home State of Minnesota in all but one county, townships have lower per capita incomes than their respective counties. Statewide, the per capita income of Minnesota townships is 25 percent below the State average. Consequently, townships are allocated a million dollars less than the amount they would be allocated under the three factor formula without tiering. This represents a 20 percent loss in their revenue sharing allocations.

The conclusion we draw from our analysis is that the targeting of revenue sharing funds to those governmental units which contain the low income population of the country could be enhanced significantly by eliminating the tiering procedures and applying the basic three factor formula directly to all units of local government within each State.

The special problem of New Jersey cities and townships

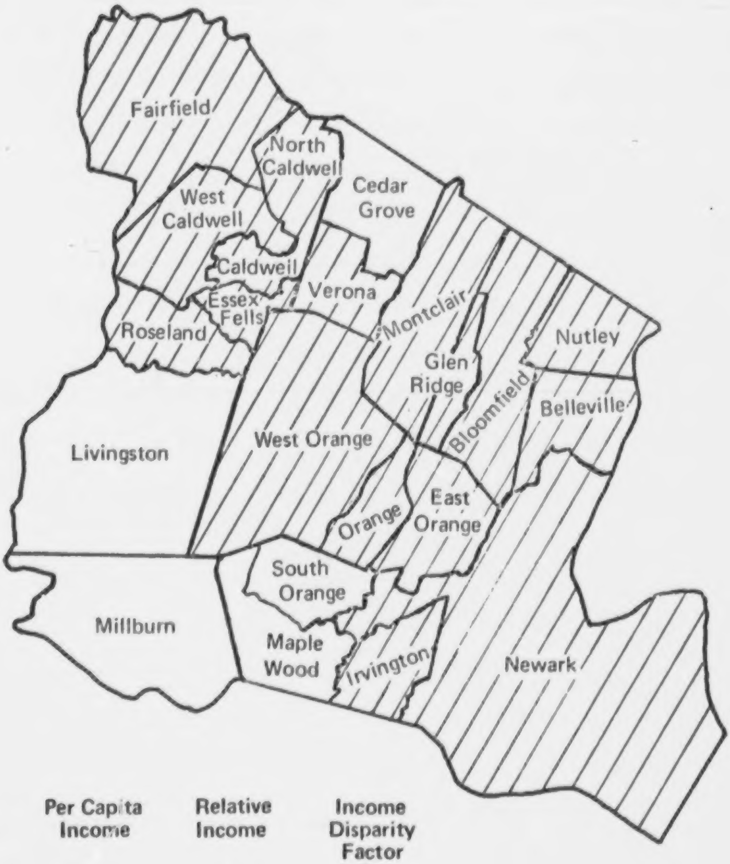
We would like to point out the special problem that the income disparity factor creates in New Jersey. The inequity between the different types of governments that I have just described exists because of differences in their per capita incomes. If a county government could change its classification to that of a city, in one of the States characterized by rural poverty, its revenue sharing allocation would automatically go up because it would then be grouped with the higher income cities. Of course, such changes in classification normally cannot be done. However, in New Jersey, there are provisions in State law whereby cities can reclassify themselves as townships and visa versa. Therefore, if the income disparity factor for the cities within a county is signficantly lower than that of the county's townships, the cities can increase their revenue sharing allocations simply by changing their name from city to township. This is precisely what is happening in Essex County.

A map of Essex County is shown on page 9. The incomes of Essex County's townships are much higher than the county. This translates into an income disparity factor which gives townships $2.76 for each dollar they are allocated based on their three formula elements, compared to $0.57 for cities in the county. Thus, if a jurisdiction reclassified itself from a city to a

EXHIBIT B

ESSEX COUNTY
LOCAL GOVERNMENTS

During Entitlement Period 10
(October 1, 1978 to September 30, 1979)


Fairfield
North Caldwell
West Caldwell
Cedar Grove
Caldwell
Essex Fells
Verona
Roseland
Montclair
Glen Ridge
Nutley
Bloomfield
Belleville
Livingston
West Orange
Orange
East Orange
South Orange
Millburn
Maple Wood
Irvington
Newark

Governments	Per Capita Income	Relative Income	Income Disparity Factor
County	5700	N/A	N/A
Townships	9605	169%	276%
Cities	5160	91	57

☐ = Townships

▨ = Cities

township it would realize about a 330 percent increase in its allocation.

Local officials from Essex County testified before the Congress during both the 1976 and 1980 renewal deliberations, attempting to correct this problem. Because the formula was not changed, Essex County cities have begun to reclassify themselves as townships. On April 26, 1978, South Orange was reclassified as a township for entitlement period 9 and saw its revenue sharing allocation rise from $74,000 for the year ending September 30, 1978, to $318,000 the following year. That is, they realized a 330 percent increase in revenue sharing by simply changing their name. In 1979, Fairfield followed suit and in entitlement period 11 saw its revenue sharing allocation rise by more than 200 percent. Without the maximum constraint which limits a jurisdiction's allocation to 145 percent of the statewide per capita allocation, it too would have experienced a gain of roughly 330 percent.

When it became clear that the Congress would not enact the detiering provision in the Carter Administration's revenue sharing bill, the communities of Montclair and West Orange, in the November 4, 1980 election, voted to reclassify themselves as townships. Their revenue sharing allocation in the next entitlement period will rise significantly.

Of course, West Orange's and Montclair's gains are other jurisdictions' losses. Both of these communities have high incomes. When they move into the township classification the average income of the remaining cities will fall precipitously because Newark's income is so low. Since the average income of the remaining cities will fall, the income disparity factor will penalize them even more than it has in the past. In fact, preliminary data for entitlement period 13 indicates that the City of Newark will lose approximately $688,000 as a result of West Orange and Montclair changing their classification.

More recently, the cities of Verona, Belleville, Bloomfield, and Nutley have announced their intention to become townships. This will cause the income disparity factor to fall even more, resulting in further losses to Newark and the remaining cities. In the extreme, if all cities except Newark were to become townships, Newark's allocation would fall by $2.1 million based on preliminary estimates for entitlement period 13.

Mr. Chairman, in your State of Minnesota, the same thing would happen if local governments could change their names. Because Minnesota townships generally have low per capita incomes, tiering penalizes them. If they were able to change their classification to "city" as in New Jersey, they too would significantly increase their general revenue sharing allocations.

Data limitations

Adopting our recommendation to detier the formula would result in some rather substantial shifts in the amounts of revenue sharing funds received by local governments. Last year, during its renewal deliberations on the program, the House Committee on Government Operations gave serious consideration to the proposal to detier the formula. The Committee concluded, however, that before such a major change could be justified, efforts were needed to improve the data used in the allocation formula. At present, the formula applies a tax effort factor at both the interstate and intrastate levels. The House Committee report correctly points out that taxes are a limited and uneven measure of relative fiscal effort because they omit non-tax revenue sources and because they overstate the fiscal effort of a jurisdiction which obtains a portion of its taxes from non-residents or corporate sources. Further, personal income is an incomplete measure of a local jurisdiction's tax capacity since most communities have revenue sources unrelated to the income of their residents.

The Committee called for a study of practical methods for improving the measurement of both fiscal capacity and revenue raising effort for use in the allocation formula. Although it is not certain whether it will be practical to develop more accurate and complete data, particularly for local units of government, this clearly is an issue that warrants serious consideration and study. We intend to provide whatever assistance we can in this effort.

Conclusions

To summarize our views, the revenue sharing program is specifically concerned with addressing fiscal disparities which exist among units of local government. While the three factor formula tends to alleviate fiscal disparities, the tiering process implicitly introduces a fourth factor into the allocation which, in many instances, produces the opposite result. While the examples we have presented here today represent some of the more extreme cases, they illustrate that rather than alleviating existing fiscal disparities, the tiering process actually compounds them. The identification and understanding of the effects of this previously undetected fourth factor should reinforce our previous recommendation that tiering be eliminated.

HOW THE TIERING PROCESS INTRODUCES INCOME DISPARITIES INTO THE REVENUE SHARING ALLOCATION PROCESS

To understand how a fourth factor--the income disparity factor--is introduced into the revenue sharing formula, a close look at the tiering process and the formulas which apply at each stage is necessary. These formulas are shown in exhibit C. In the first step, the fund for local governments is allocated to county areas based on each county's population, relative income, and tax effort using aggregate data for the county area. Each county's percentage share is equal to the percentage share that its three data elements represent to the sum total of these elements for all counties in the state.

In the second step, each county area allocation is broken down into as many as three funds: one for the county government, one for further distribution to the cities within the county, and a third to be allocated to the county's townships if present. These three funds are determined by the percentage share of adjusted taxes collected by each of the three types of government. For example, if cities levied 50 percent of all taxes in the county then the fund for cities would be 50 percent of the county allocation.

In the final step, the fund for cities is allocated to individual units of government based on the percentage share their population, relative income, and tax effort represent of the sum of these three factors for all cities within the county. If there

Exhibit C

REVENUE SHARING TIERING PROCESS AND FORMULAS

[1] First Step: County Area Allocations, Three Factor Formula

$$\left[\begin{array}{l}\text{County area}\\ \text{GRS allocation}\end{array}\right] = \left[\begin{array}{c}\text{\$ amount to be}\\ \text{allocated to local}\\ \text{governments in state}\end{array}\right]\left[\frac{(\text{Co. area POP})(\text{Co. area RIF})(\text{Co. area GTEF})}{\begin{array}{l}\text{sum for all}\\ \text{counties in}\\ \text{the state}\end{array}\left[\begin{pmatrix}\text{Co. area}\\ \text{POP}\end{pmatrix}\begin{pmatrix}\text{Co. area}\\ \text{RIF}\end{pmatrix}\begin{pmatrix}\text{Co. area}\\ \text{GTEF}\end{pmatrix}\right]}\right]$$

[2] Second Step: Fund for Cities, Tax Share Formula

$$\left[\begin{array}{l}\text{\$ amount to be allocated}\\ \text{to cities within a county}\end{array}\right] = \left[\begin{array}{l}\text{County area}\\ \text{GRS allocation}\end{array}\right]\left[\frac{\begin{array}{c}\text{Adjusted taxes collected by }\underline{\text{all}}\\ \text{cities within the county}\end{array}}{\begin{array}{c}\text{Adjusted taxes collected by }\underline{\text{all}}\\ \text{governments within the county}\end{array}}\right]$$

[3] Third Step: City Allocations, Three Factor Formula

$$\left[\begin{array}{l}\text{City government}\\ \text{GRS allocation}\end{array}\right] = \left[\begin{array}{c}\text{\$ amount to be}\\ \text{distributed to cities}\\ \text{in same county}\end{array}\right]\left[\frac{(\text{City POP})\quad(\text{City RIF})\quad(\text{City GTEF})}{\begin{array}{c}\text{Sum for all}\\ \text{cities in}\\ \text{county}\end{array}\left[\begin{pmatrix}\text{City}\\ \text{POP}\end{pmatrix}\begin{pmatrix}\text{City}\\ \text{RIF}\end{pmatrix}\begin{pmatrix}\text{City}\\ \text{GTEF}\end{pmatrix}\right]}\right]$$

Where the following definitions apply:

Co. area POP = Population of county

Co. area RIF = Ratio of state per capita income to per capita income of county (relative income factor)

Co. area GTEF = Ratio of adjusted taxes collected by all governments in a county to total money income of county residents (general tax effort factor)

City POP = Population of local government

City RIF = Ratio of state per capita income to local per capita income

City GTEF = Ratio of local government adjusted taxes to total local money income are townships in the county area their allocations are determined by the same process.

The ultimate impact of applying these three formulas at each stage can be seen by simply substituting the formulas from steps one and two into the formula for cities shown in step three. After using some elementary algebra the formula shown in exhibit D emerges. 1/ Inspection of this formula shows that each city's revenue sharing allocation is determined by its population, relative income, and tax effort as a percent of the sum of these three factors for all counties within the state.

Further inspection of the formula also shows that the allocation that goes to each city, based on its three factors, is adjusted upward or downward depending on the last expression shown in square brackets. The key element is the ratio of each city's per capita income to that of its county area. You will notice that this fourth factor receives an exponent of two while the three factors explicitly included by the Congress all have implied exponents of one, thus the double weighting of the income disparity factor. Notice also that the income disparity factor of each city within a county is weighted by its three factors and summed up for all cities located in the same county. In other words, this last term represents the average income disparity between a county and its cities.

For example, if the average of the squared income disparity within a county was 25 percent, then every city in that county

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1/The mathematical derivation of this formula is shown on page 19.

Exhibit D

THE FOUR FACTOR GRS FORMULA FOR CITIES CREATED BY THE TIERING PROCESS

$$\left[\begin{array}{c}\text{City}\\ \text{government}\\ \text{GRS}\\ \text{allocations}\end{array}\right] = \left[\begin{array}{c}\text{\$ amount to be}\\ \text{allocated to all}\\ \text{governments in state}\end{array}\right]\left[\frac{(\text{City POP})\quad(\text{City RIF})\quad(\text{City GTEF})}{\begin{array}{c}\text{Sum for all}\\ \text{counties in}\\ \text{state}\end{array}\left[\left(\begin{array}{c}\text{Co. area}\\ \text{POP}\end{array}\right)\left(\begin{array}{c}\text{Co. area}\\ \text{RIF}\end{array}\right)\left(\begin{array}{c}\text{Co. area}\\ \text{GTEF}\end{array}\right)\right]}\right]\left[\frac{\begin{array}{l}\text{Sum for cities}\\ \text{in same county}\end{array}\left[\left(\begin{array}{c}\text{City}\\ \text{POP}\end{array}\right)\left(\begin{array}{c}\text{City}\\ \text{RIF}\end{array}\right)\left(\begin{array}{c}\text{City}\\ \text{GTEF}\end{array}\right)\left(\frac{\text{City PCI}}{\text{County PCI}}\right)^2\right]}{\begin{array}{l}\text{Sum for}\\ \text{cities in}\\ \text{same county}\end{array}\left[\left(\begin{array}{c}\text{City}\\ \text{POP}\end{array}\right)\left(\begin{array}{c}\text{City}\\ \text{RIF}\end{array}\right)\left(\begin{array}{c}\text{City}\\ \text{GTEF}\end{array}\right)\right]}\right]$$

Where the following definitions apply:

POP = Population

PCI = Per capita income

RIF = Relative income factor

GTEF = General tax effort factor

will have its revenue sharing allocation increased by that amount. Alternatively, if in another county the squared income disparity factor of cities averaged 20 percent below that of the county, their revenue sharing allocations would be reduced by that amount. Thus, the impact of the tiering process is to introduce a fourth factor into the allocation process which receives double weight and distorts allocations based on the three factor formula.

It should be noted that allocations to county governments are determined by the first two steps in the tiering process. Therefore, when the county area allocation is multiplied by the tax share formula in step two, the county government's tax effort emerges without the income disparity factor. Consequently, tiering does not produce the same inequities among county governments that it does among cities and townships.

MATHEMATICAL DERIVATION
OF THE FOUR FACTOR REVENUE SHARING FORMULA

NOTATION

The following notation will be used in describing the four factor revenue sharing formula:

k = 1, ...K = county area identifier (K = number of counties).

i = 0, 1, ...N_k = local government identifier (N_k = number of jurisdictions in county k; i = o denotes the county government).

P_{ik} = Population of jurisdiction i in county k (P_{ok} represents the population of both the county area and county government).

T_{ik} = Tax collections of jurisdiction i in county k.

Y_{ik} = Aggregate personal income of residents of jurisdiction i in county k.

y_{ik} = Y_{ik}/P_{ik} = Per capita income of residents in jurisdiction i in county k.

y_s = Per capita income of residents in state s.

G_s = Revenue sharing fund to be distributed to local governments in state s.

G_k = Revenue sharing allocation to county area k.

G_{mk} = Revenue sharing fund to be distributed among cities in county k.

G_{ik} = Revenue sharing allocation to jurisdiction i in county k.

COUNTY AREA ALLOCATION FORMULA

Using the above notation the county area three factor formula can be expressed as:

$$(1)\quad G_k = G_s\left[\frac{P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{\sum_{i=o}^{N_k} T_{ik}}{Y_{ok}}\right)}{\sum_{k=1}^{K} P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{\sum_{i=o}^{N_k} T_{ik}}{Y_{ok}}\right)}\right]$$

The denominator can be rewritten as follows:

$$\sum_{k=1}^{K}\sum_{i=o}^{N_k} P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{T_{ik}}{Y_{ok}}\right) = \sum_k\sum_i\left(\frac{P_{ok}}{Y_{ok}}\right)\left(\frac{y_s}{y_{ik}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{Y_{ik}}{P_{ik}}\right)P_{ik}$$

$$\sum_k\sum_i P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{T_{ik}}{Y_{ok}}\right) = \sum_k\sum_i P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{1}{y_{ok}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)y_{ik}$$

$$(2)\quad \sum_k\sum_i P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{T_{ik}}{Y_{ok}}\right) = \sum_k\sum_i P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)^2$$

FUND FOR CITIES

The fund for cities (G_{mk}) is obtained by multiplying the county area allocation (G_k) by the share of county tax collections raised by cities (i.e., $\sum_{i=1}^{N_k} T_{ik} \big/ \sum_{i=o}^{N_k} T_{ik}$). Multiplying the numerator of equation (1) by the percentage share of taxes raised by cities will result in the fund for cities:

$$(3)\quad G_{mk} = G_s\left[\frac{P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{\sum_{i=1}^{N_k} T_{ik}}{Y_{ok}}\right)}{\sum_{k=1}^{K} P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{\sum_{i=o}^{N_k} T_{ik}}{Y_{ok}}\right)}\right]$$

Substituting the result from equation 2 into equation 3 the fund for cities can be expressed as:

$$(4)\quad G_{mk} = G_s\left[\frac{\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)^2}{\sum_{k=1}^{K}\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)^2}\right]$$

CITY ALLOCATIONS

The three factor formula for cities can be expressed as:

$$\frac{P_{ik}\left(\frac{y_{ok}}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}{\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_{ok}}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}$$

The relative income factor $\left(\frac{y_{ok}}{y_{ik}}\right)$ can be rewritten relative to State per capita income in both the numerator and denominator because y_{ok} can be factored from the denominator and cancelled with the same term of the numerator. Thus, we obtain the following

$$(5) \quad \frac{P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}{\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}$$

Each city's allocation is determined by multiplying equation 4 by equation 5.

$$(6) \quad G_{ik} = G_s \left[\frac{\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)^2}{\sum_{k=1}^{K}\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)^2}\right]\left[\frac{P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}{\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}\right]$$

Rearranging terms and rewriting the denominator of the first term in its original form we obtain the four factor formula shown in exhibit D.

$$G_{ik} = G_s \left[\frac{P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}{\sum_{i=1}^{K} P_{ok}\left(\frac{y_s}{y_{ok}}\right)\left(\frac{\sum_{i=0}^{N_k} T_{ik}}{Y_{ok}}\right)}\right]\left[\frac{\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)\left(\frac{y_{ik}}{y_{ok}}\right)}{\sum_{i=1}^{N_k} P_{ik}\left(\frac{y_s}{y_{ik}}\right)\left(\frac{T_{ik}}{Y_{ik}}\right)}\right]^2$$

The last term in brackets is defined as the income disparity factor in that it represents a weighted average of the squared income disparity between each city and the county area $\left(\frac{y_{ik}}{y_{ok}}\right)^2$. The weights used to compute the average are each city's population, relative income and tax effort.

ILLUSTRATIVE EXAMPLES OF INEQUITIES IN GRS PAYMENTS TO LOCAL GOVERNMENTS IN NORTH CAROLINA, NEW JERSEY, AND MINNESOTA

The three factor formula was designed to allocate more aid to lower income communities with equivalent levels of tax effort. In table II-1 units of local government with the same level of tax effort in New Jersey, North Carolina, and Minnesota are ranked according to their income.

If the formula performed as intended, progressively lower income governments would receive progressively higher per capita payments. The data clearly demonstrate that this does not occur. In the high tax effort group in New Jersey, Wayne Township in Passaic County receives an allocation of $12.27 per person; the Borough of Rutherford in Bergen County has 3 percent less income but receives a 23 percent smaller grant. The town of Clinton in Hunterdon County with 9 percent less income receives a grant 35 percent less than Wayne's.

The income disparity factor explains why these perverse results occur. The cities in Bergen and Hunterdon Counties have their allocations reduced by 5 and 23 percent respectively. Thus, while Rutherford and Clinton's lower per capita incomes would qualify them for a larger per capita grant, the fact that they are located in counties where the county's cities have relatively low incomes produces a smaller instead of a larger grant.

Of the three states shown, the greatest inequities occur in North Carolina. This is because North Carolina has the greatest income disparities ranging from a low of -2 percent in Mecklenburg County to +111 percent in Northampton, with wide variations in between. In New Jersey the variation is smaller, ranging from +27 to -43 percent, except for the extreme case of Essex County townships. Finally, the inequities between Minnesota cities and townships is reflected in the income disparity factor for the two types of governments. Nearly all cities have their allocations increased by the disparity factor while all township governments have their allocations reduced.

In comparing the disparity factor across the three states, several patterns emerge. In both North Carolina and Minnesota the disparity factor serves to increase allocations to nearly every city listed. This is a reflection of the fact that in these two states residents of cities have higher incomes than those who live outside the cities. In New Jersey, the income disparity factor shifts funds in the opposite direction, reducing payments to the vast majority of the state's cities which contain the poorer residents of the state.

Our analysis shows that these inequities exist in varying degrees in all states except Hawaii.

Illustration of Inequities in General Revenue Sharing Payments

New Jersey

General Tax Effort Factor = 2.6 Percent

Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
SUMMIT	UNION	5.07	10,129	-18
SEA GIRT	MONMOUTH	5.94	9,771	-9
MONTCLAIR	ESSEX	4.24	8,401	-43
DEMAREST	BERGEN	7.35	8,030	-5
MOORESTOWN [a]	BURLINGTO	8.38	7,382	-1
METUCHEN	MIDDLESEX	7.97	6,876	-13
CRANFORD [a]	UNION	10.48	6,631	10
WAYNE [a]	PASSAIC	12.27	6,534	27
RUTHERFORD	BERGEN	9.45	6,311	-5
CLINTON	HUNTERDON	7.98	5,977	-23
WALL [a]	MONMOUTH	9.95	5,795	-10
ALLAMUCHY [a]	WARREN	11.51	5,577	4
PALISADES PA	BERGEN	10.88	5,572	-5
MIDDLESEX	MIDDLESEX	10.15	5,397	-12
LIBERTY [a]	WARREN	12.72	5,208	4
SOUTH RIVER	MIDDLESEX	10.51	5,205	-13
SPRING LAKE	MONMOUTH	11.13	5,162	-9
DELANCO [a]	BURLINGTO	12.72	4,960	-1
UPPER FREEHO [a]	MONMOUTH	11.64	4,939	-10
BRICK [a]	OCEAN	12.81	4,764	-2
EGG HARBOR	ATLANTIC	8.34	4,738	-14
GREENWICH [a]	GLOUCESTE	12.87	4,596	-5
GLASSBORO	GLOUCESTE	15.16	4,331	3
PENNS GROVE	SALEM	11.22	4,055	-14
TUCKERTON	OCEAN	16.70	4,005	7

North Carolina

General Tax Effort Factor = 2.0 Percent

Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
CARY	WAKE	12.68	5,581	9
CANDOR	MONTGOMER	16.61	5,097	43
STONEVILLE	ROCKINGHA	15.20	4,899	17
LANDIS	ROWAN	16.08	4,782	18
LIBERTY	RANDOLPH	18.23	4,558	25
OLD FORT	MCDOWELL	26.20	4,427	79
CREEDMOOR	GRANVILLE	22.16	4,374	52
NASHVILLE	NASH	23.03	4,313	53
TAYLORSVILLE	ALEXANDER	22.91	4,305	50
RUTHERFORDTO	RUTHERFOR	17.51	4,285	16
FRANKLIN	MACON	27.46	4,248	83
GREENVILLE	PITT	18.07	4,206	19
PINK HILL	LENOIR	17.67	4,131	11
LAWNDALE	CLEVELAND	17.63	3,994	10
ORIENTAL	PAMLICO	25.55	3,864	52
ELIZABETH	PASQUOTAN	17.98	3,779	6
PLYMOUTH	WASHINGTO	18.22	3,591	0
COATS	HARNETT	25.74	3,532	38
KENLY	JOHNSTON	21.64	3,321	13
BANNER ELK	AVERY	25.42	1,885	-26

Minnesota

General Tax Effort Factor = 1.4 Percent

Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
MINNETRISTA	HENNEPIN	6.90	6,737	-11
HALLOCK	KITTSON	9.76	6,188	14
BLOOMINGTON	HENNEPIN	8.01	6,140	-11
CHISAGO	CHISAGO	11.71	5,166	10
ROSEMOUNT	DAKOTA	10.58	4,959	0
FAIRMONT	MARTIN	11.36	4,956	3
WOODBURY	WASHINGTO	10.92	4,888	-4
SPRING GROVE	HOUSTON	12.34	4,658	8
REDWOOD FALL	REDWOOD	13.35	4,603	17
GRAND RAPIDS	ITASCA	12.55	4,510	17
DAWSON	LAC QUI P	16.37	4,433	34
MONTEVIDEO	CHIPPEWA	13.76	4,422	14
NEW ULM	BROWN	13.21	4,404	12
WELLS	FARIBAULT	12.00	4,368	0
FARIBAULT	RICE	13.55	4,273	7
APPLETON	SWIFT	17.95	4,208	39
MILACA	MILLE LAC	16.20	4,196	31
LITTLE FALLS	MORRISON	18.16	4,098	37
COKATO	WRIGHT	16.06	4,042	22
OSAKIS	DOUGLAS	15.98	3,955	18
ADRIAN	NOBLES	16.76	3,613	16
COLD SPRING	STEARNS	19.16	3,495	23
MAHNOMEN	MAHNOMEN	13.56	3,492	30
SAUK CENTRE	STEARNS	18.99	3,472	23
PINE	PINE	15.62	3,464	4

[a] - These governments are classified as townships by the Bureau of the Census.

ATTACHMENT II

Illustration of Inequities in General Revenue Sharing Payments

New Jersey

General Tax Effort Factor = 2.4 Percent

Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
MILLBURN	a ESSEX	11.81	13,608	176
HARDING	a MORRIS	4.92	10,758	-7
INTERLAKEN	MONMOUTH	4.95	10,624	-9
RIDGEWOOD	BERGEN	5.73	9,543	-5
MAPLEWOOD	a ESSEX	19.28	8,444	176
SPRINGFIELD	a UNION	7.84	8,114	10
MENDHAM	MORRIS	7.85	7,302	-1
OCEAN	a MONMOUTH	7.81	6,788	-10
MAYWOOD	BERGEN	8.88	6,328	-5
LAWRENCE	a MERCER	10.39	6,205	13
BERGENFIELD	BERGEN	9.34	5,945	-5
MIDDLETOWN	a MONMOUTH	9.02	5,771	-10
CEDAR GROVE	a ESSEX	27.53	5,761	176
BOONTON	MORRIS	10.27	5,662	-1
TINTON FALLS	MONMOUTH	9.40	5,559	-9
PISCATAWAY	a MIDDLESEX	11.68	5,356	7
GREEN	a SUSSEX	11.14	5,332	1
MOUNT EPHRAI	CAMDEN	7.96	4,950	-31
MILFORD	HUNTERDON	9.19	4,912	-23
MANVILLE	SOMERSET	11.39	4,880	-6
RIVERSIDE	a BURLINGTO	12.20	4,659	-1
OGDENSBURG	SUSSEX	11.12	4,607	-11
BEACHWOOD	OCEAN	13.69	4,521	7
DEPTFORD	a GLOUCESTE	12.83	4,310	-5
CLAYTON	GLOUCESTE	14.37	4,232	3

North Carolina

General Tax Effort Factor = 1.7 Percent

Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
MATTHEWS	MECKLENBU	9.33	5,730	-2
CONWAY	NORTHAMPT	21.42	5,356	111
WEAVERVILLE	BUNCOMBE	13.62	4,870	17
GROVER	CLEVELAND	13.22	4,668	10
CONCORD	CABARRUS	14.81	4,661	22
GASTONIA	GASTON	13.62	4,586	10
LEXINGTON	DAVIDSON	12.67	4,534	5
BLACK MOUNTA	BUNCOMBE	14.50	4,523	17
FRANKLINTON	FRANKLIN	19.62	4,395	55
MOUNT HOLLY	GASTON	13.68	4,374	10
ROXBORO	PERSON	20.52	4,302	62
CHINA GROVE	ROWAN	16.03	4,119	18
MARSHALL	MADISON	22.53	4,013	63
CLAYTON	JOHNSTON	17.35	3,631	13
CLYDE	HAYWOOD	18.06	3,598	19
ROSEBORO	SAMPSON	21.42	3,497	38
WARSAW	DUPLIN	22.26	3,472	37
BLADENBORO	BLADEN	29.91	3,369	98
CRESWELL	WASHINGTO	19.25	2,805	0

Minnesota

General Tax Effort Factor = 1.0 Percent

Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
ST LOUIS PAR	HENNEPIN	5.05	6,466	-11
CHANHASSEN	CARVER	7.63	5,595	8
HIBBING	ST LOUIS	7.91	5,353	8
ELBOW LAKE	GRANT	8.17	5,317	14
LONG LAKE	HENNEPIN	6.41	5,247	-11
BRECKENRIDGE	WILKIN	8.77	5,246	21
NEW HOPE	HENNEPIN	6.49	5,122	-11
COLUMBIA HEI	ANOKA	7.57	5,053	0
SLAYTON	MURRAY	9.60	4,991	24
HOYT LAKES	ST LOUIS	8.87	4,843	8
WILLMAR	KANDIYOHI	9.15	4,723	15
LITCHFIELD	MEEKER	11.23	4,485	31
ARLINGTON	SIBLEY	10.08	4,418	21
NORTHFIELD	RICE	9.31	4,340	7
MADELIA	WATONWAN	9.80	4,324	11
NORWOOD	CARVER	9.59	4,280	8
BLOOMING PRA	STEELE	10.28	4,250	9
HAM LAKE	ANOKA	8.62	4,233	0
STARBUCK	POPE	7.84	4,180	-14
HOUSTON	HOUSTON	10.39	4,172	8
BAXTER	CROW WING	11.94	4,005	20
NEW PRAGUE	SCOTT	10.67	3,988	6
BAYPORT	WASHINGTO	9.72	3,970	-4
ALBANY	STEARNS	12.80	3,829	23
BRANCH	CHISAGO	12.30	3,462	10
STOCKHOLM	a WRIGHT	9.59	3,210	-20
VICTOR	a WRIGHT	11.02	2,790	-20

a - These governments are classified as townships by the Bureau of the Census.

Illustration of Inequities in General Revenue Sharing Payments

New Jersey				
Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
General Tax Effort Factor = 2.1 Percent				
ESSEX FELLS	ESSEX	4.07	12,217	-43
HO-HO-KUS	BERGEN	4.30	11,483	-5
FAR HILLS	SOMERSET	4.70	10,403	-6
MOUNTAIN LAK	MORRIS	4.86	10,087	-1
GLEN ROCK	BERGEN	5.40	8,770	-5
KINNELON	MORRIS	5.76	8,522	-1
CHATHAM	MORRIS	6.31	7,986	-1
FAIR LAWN	BERGEN	6.41	7,529	-5
FANWOOD	UNION	5.84	7,041	-18
ROCKY HILL	SOMERSET	7.40	6,590	-6
FLEMINGTON	HUNTERDON	6.17	6,175	-23
PARSIPPANY T a	MORRIS	7.97	5,911	-7
SADDLE BROOK a	BERGEN	8.08	5,835	-7
BOGOTA	BERGEN	8.71	5,576	-5
HALEDON	PASSAIC	7.79	5,320	-18
EDGEWATER PA a	BURLINGTO	9.41	5,268	-1
DUNELLEN	MIDDLESEX	8.42	5,220	-13
INDEPENDENCE a	WARREN	10.54	5,114	4
MOUNT HOLLY a	BURLINGTO	10.35	4,976	-1
POINT PLEASA	OCEAN	11.46	4,847	7
PEMBERTON a	BURLINGTO	10.93	4,554	-1
FAIRFIELD a	CUMBERLAN	11.14	4,045	-12

North Carolina				
Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
General Tax Effort Factor = 1.1 Percent				
ELIZABETHTOW	BLADEN	15.12	4,827	98
MURFREESBORO	HERTFORD	8.75	4,743	33
CORNELIUS	MECKLENBU	7.50	4,643	-2
HERTFORD	PERQUIMAN	14.52	4,408	77
WINDSOR	BERTIE	15.65	4,217	91
SOUTHPORT	BRUNSWICK	8.97	4,213	25
PANTEGO	BEAUFORT	9.52	4,105	9
NEWPORT	CARTERET	10.66	4,076	25
TEACHEY	DUPLIN	12.92	3,849	37
BATH	BEAUFORT	9.84	3,773	9
RICH SQUARE	NORTHAMPT	21.11	3,654	111
SARATOGA	WILSON	12.21	3,583	22
AUTRYVILLE	SAMPSON	13.57	3,505	38
SCOTLAND NEC	HALIFAX	18.74	3,432	89
BUNN	FRANKLIN	17.53	3,183	55
MAGNOLIA	DUPLIN	15.56	3,156	37
PROCTORVILLE	ROBESON	14.08	3,150	71
SPEED	EDGECOMBE	14.35	2,807	33
HOLLY RIDGE	ONSLOW	22.99	2,689	67
MAYSVILLE	JONES	15.63	2,629	13
COFIELD	HERTFORD	14.99	1,794	33

Minnesota				
Government	County	Per Cap GRS Payment	Per Capita Income	County Income Disparity
General Tax Effort Factor = 0.8 Percent				
PLYMOUTH	HENNEPIN	4.60	6,364	-11
PRIOR LAKE	SCOTT	5.66	5,692	6
SHOREVIEW	RAMSEY	5.33	5,445	-4
EAGAN	DAKOTA	5.70	5,291	0
STILLWATER	WASHINGTO	5.48	5,084	-4
HAWLEY	CLAY	5.78	5,082	-3
APPLE VALLEY	DAKOTA	6.23	5,069	0
EVELETH	ST LOUIS	6.72	4,838	8
ANOKA	ANOKA	6.48	4,803	0
VADNAIS HGTS	RAMSEY	5.85	4,752	-4
BIWABIK	ST LOUIS	7.69	4,544	8
TYLER	LINCOLN	9.22	4,538	66
TWO HARBORS	LAKE	7.32	4,513	7
SILVER CREEK a	LAKE	6.81	4,498	-1
LINWOOD a	ANOKA	5.49	4,416	-17
ADA	NORMAN	9.40	4,355	28
ST PAUL PARK	WASHINGTO	7.11	4,352	-4
VASA a	GOODHUE	5.11	4,348	-31
BUFFALO	WRIGHT	8.88	4,333	22
HARRIS a	ITASCA	5.78	4,193	-14
GILBERT	ST LOUIS	8.03	4,147	8
FAIRFAX	RENVILLE	8.90	3,915	13
LINOLAKES	ANOKA	8.24	3,871	0
MAPLE LAKE	WRIGHT	9.62	3,826	22
LAKE PRAIRIE a	NICOLLET	5.66	3,725	-27
HOLDING a	STEARNS	5.99	2,611	-48
CASS LAKE	CASS	12.97	2,531	40
NEW HARTFORD a	WINONA	8.58	2,330	-38
MILLWOOD a	STEARNS	11.14	1,401	-48

a - These governments are classified as townships by the Bureau of the Census.

UNITED STATES DEPARTMENT OF COMMERCE
Office of Federal Statistical Policy and Standards
Washington, D.C. 20230

Subcommittee on Intergovernmental Relations

Testimony presented by

Joseph W. Duncan, Director

Office of Federal Statistical Policy and Standards

U.S. Department of Commerce

May 13, 1981

Thank you, Mr. Chairman. As Director of the Office of Federal Statistical Policy and Standards, I appreciate this opportunity to address the Subcommittee on Intergovernmental Relations concerning the implications of how data problems of reliability and availability affect fiscal disparaties. I plan to cover two basic topics:

1. The role of statistics in the distribution of Federal funds, including examples of specific problems; and

2. A proposal for periodic review to ensure that data needed for Federal program operations are available, sound and used properly.

Role of Statistics in the Allocation of Federal Funds

In recognition of the importance of the use of statistical data in allocation formulas and program eligibility criteria, the Office of Federal Statistical Policy and Standards conducted a major study during 1980. This study involved an investigation of the use of Federal statistics in allocating funds and determining program eligibility in the domestic assistance programs administered by all executive branch Departments. The programs included in this study were those listed in OMB's Catalogue of Federal Domestic Assistance Programs, 1979. 1/

Major findings of the study revealed that statistical data were instrumental in determining the allocation of $122 billion (obligations) in FY 1979 under 150 assistance programs administered by 18 Departments and agencies under a variety of financial arrangements.

Sixty-seven programs provided funds to State governments and an additional 71 made payments to both State and local governments. This analysis explains the keen interest State and local officials have in the accuracy of statistical factors used to calculate their share of payments. Recently, States and localities have demonstrated their sensitivity to this issue by claiming, in

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1/ For details of our study, see "Distributing Federal Funds: The Use of Statistical Data (Preliminary Report)" by Danuta Emery, Valencia Campbell, and Stanley Freedman in Statistical Reporter, December 1980, pp. 73 to 90.)

court, that flaws in statistics cause a loss in the amount of Federal funds they are entitled to receive. Over 40 suits have been filed in Federal court asking for rulings on adjustment for the population undercount of 1980 census data.

Concern about the accuracy of census and other data used in funding allocations and eligibility is understandable. The OFSPS study found that decennial census factors are used directly in 69 programs, accounting for the largest dollar obligations ($78.4 billion) associated with any single set of statistics. Census figures have the greatest impact on Federal funding programs that prescribe population totals for eligibility. In this situation, a strict population cutoff could preclude qualification, and errors in data could place a jurisdiction above or below the cutoff point. Census population counts also impact on assistance payments through their use as denominators and control totals in other statistical programs, such as per capita income statistics, unemployment statistics, and post-censal estimates of population.

Census data, however, are not the only series used for distributing assistance payments. Sixty-one published Federal reports, 15 different types of state records, and a wide variety of administrative, proprietary, financial, and other miscellaneous sources provide data for allocations. More often than not, Mr. Chairman, agencies are forced by statutory requirements to employ unreliable data in formulas.

In 1979 the Commission on Employment and Unemployment Statistics recommended that Congress designate an appropriate congressional office to work with executive statistical agencies in developing technical information needed in writing legislative formulas including estimates of the costs of necessary statistical improvements. The Commission also urged Congress to review allocation formulas in legislation distributing Federal funds to States and local areas. It reported that the congressional intent to distribute funds equitably was being thwarted by the failure of Congress to avoid formulas under which allocations are especially sensitive to statistical errors. 2/ Mr. Chairman, I am pleased to see that this Subcommittee and the executive branch are now addressing the need for these improvements.

Issues of data availability and reliability affect allocations, but validity should not be ignored. Many of the data items currently in use are, in nontechnical terms—fragile. By this, I mean that the measure breaks down because the statistic is used in a context that is inconsistent with the phenomenon the statistic is intended to measure. The Housing and Community Development Act of 1977 established Urban Development Action Grants which were intended to revitalize severely distressed cities. The act, however, did not specify the targeted cities. Instead, the Department of Housing and Urban

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2/ Counting the Labor Force, National Commission on Employment and Unemployment statistics, Washington, D.C., 1979.

Development developed eligibility criteria consisting of six statistical criteria. For a city to be eligible, it would have to rank in the lower half of all cities for three of the six criteria--age of housing, (presumably cities with old housing stock were distressed); population growth (low growth is one indication of distress); low growth in levels of income; low growth in levels of employment; extent of poverty; and high rates of unemployment.

The age of housing criterion, percent of homes built prior to 1939, is most frequently criticized but is still in use despite its shortcomings. One of these is the fact that the year built refers to when the house was built and does not take into account condominum conversion or other remodeling. The criterion does not take into account the condition of the house--the White House and many other lavish residences in Washington are pre-1940. Rental housing may be in poor condition, but this particular statistic does not cover rental units, nor does it cover housing in poor condition built after 1950. 3/ This is an example of a fragile statistic--its use extends far beyond the concept it actually measures, and it fails to perform satisfactorily (breaks down) as a criterion for eligibility.

Other examples of fragile data are: census statistics on city government finances and employment. These are designed to provide an overall economic picture, with a limited amount of detailed information. However, trying to define city government fiscal strain and show the specific degree of this by using the census data is virtually impossible because the government data are not designed to reflect surpluses or deficits in the sense of accounting identities. The financial statistics cut across all funds of a city's accounting system, but do not take into consideration such items as accrued liabilities of a government. Certain key items are not collected such as retirement contribution liabilities, total short term debt issued and retired during the fiscal year, and long term debt schedules. Finally, data are not compiled on the source of capital outlays--whether or not they are financed via debt issuance or through current revenues of the city. The census data on city finances must be supplemented with additional detail at the city level to develop indicators that can be thought of as reflecting a condition of financial difficulty.

I have used this statistical series to highlight a broader issue. The limitations discussed were derived from Census Bureau reports and reflect the tendency of statistical agencies to discuss the limitations of their data. Limitations best describe what others have called shortcomings in the data. When the statistical agency is asked to comment on the adequacy of its data for an application it can respond very specifically. As a matter of fact, the Treasury's Office of Revenue Sharing and the Census Bureau have established good

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3/ For a more detailed critique, see GAO Report: Criteria for Participation in the Urban Development Action Grant Program Should be Refined, March 20, 1980.

lines of communication in support of the General Revenue Sharing formula. Unfortunately, that relationship is the exception and not the rule. Statistical agencies are rarely asked to comment on legislation containing formula provisions that incorporate their data. Nor are they always aware of where and now their data are used. Having read our study, several agencies called for more details about the use of their data in formulas.

Periodic Review of the Use of Statistics in Indexation, Allocation and Eligibility

These hearings underscore the importance of reviewing the use of statistics in formulas and other allocation procedures. There is clearly a need for the Congress to examine the mechanisms which are used to distribute the billions of dollars of Federal expenditures which go to individuals, governments, and institutions. In recent years, while the proportion of the budget affected by statistics has grown dramatically, the Congress has not undertaken a systematic review of the technical aspects of statistical formulas and eligibility criteria. If sound budgetary policy is to be established in this time of serious reconsideration of budget priorities and procedures, it is essential to make such a review.

I believe that such a review should include two elements:

1. An assessment of the overall performance of the formulas, eligibility criteria in meeting the stated goals of assistance programs. Do the techniques actually result in appropriate allocations to the groups at risk?
2. An evaluation of the reliability or appropriateness of the statistics which are being used to make the fund allocations. What accuracy levels prevail for the geographic area being considered? Are the statistics designed, in concepts and definitions, to describe the appropriate groups?

When the reliability of the statistic is evaluated, it would be appropriate to consider such factors as the initial purpose of the data collection, the coverage of the sample or census, and the timeliness and accuracy of the data. During the time that many of the existing formulas were being developed, statistical agencies were not asked to comment on the reliability or validity of existing series for the proposed use. For example, the data may be so inaccurate for small geographic areas that the intended targeting objective becomes meaningless.

In general, the statistical agencies know best their data and their limitations. These agencies can be a valuable resource to Congress if they are asked to evaluate formula and legislative proposals. In the future, I would urge that the statistical agencies be consulted when new formulas or indexing uses are being developed or revised.

In the longer run, if the needs of legislation are more clearly defined, it should be possible to insure that data needs for formulas and other allocations receive attention when statistical agencies develop their priorities for data improvement, new data items, and plans for tabulations.

UNITED STATES DEPARTMENT OF COMMERCE
Office of Federal Statistical Policy and Standards
Washington, D.C. 20230

July 9, 1981

SUBCOMMITTEE ON
RECEIVED
[illegible]
INTERGOVERNMENTAL RELATIONS

Honorable Dave Durenberger
Chairman, Subcommittee on
Intergovernmental Relations
United States Senate
Washington, D. C. 20510

Dear Senator Durenberger:

Thank you for your letter forwarding Senator Sasser's questions with respect to the use of "old figures" for FY 1982 grant allocations and the difficulty of obtaining cost of government differentials.

Senator Sasser's question on the use of old figures has two parts; the first concerns the age of data used in grant allocations generally, while the second is related to certain programs which the administration has proposed to consolidate into block grants. The allocation formulas currently in use frequently employ less than timely or "old" data. There are generally two causes for this. In many cases, such as the medicaid formula for calculating the Federal Medical Assistance Percentage, statutory language prescribes both the data which are to be used and the way calculations should be performed. In the medicaid program, this means that 5 year old income data are employed in the allocation process. This particular example was discussed in Senator Reigle's written testimony of May 13, 1981. In other cases, the use of old data is necessitated by the fact that formulas require the use of small area data. The only source of such information is the decennial census, which obviously becomes dated by the end of each decade. Since there is no central office or agency controlling or reviewing agency formula practices on an ongoing basis, it would be necessary to conduct a program by program review to determine precisely which programs will use old data in FY 82 grant allocation.

The second part of Senator Sasser's first question concerns grants slated for consolidation under the Administration's block grant proposals. Block grant funding has been designed to be simple, to allocate funds rapidly, and to cause the least possible disruption in the intergovernmental system. Thus, the Administration has proposed that each State receive funding at approximately 75 percent of current FY 81 service levels for the programs being consolidated. The block grant proposal does not contain specific provisions for using statistical data in allocating funds.

I have forwarded Senator Sasser's question on cost of government differentials to the Bureau of the Census for comment since that agency compiles governments data. When Census has had an opportunity to respond, I will provide further information to you. In the interim, I hope this partial response will be of use to you and Senator Sasser. I look forward to a continuing dialogue on this important topic.

Sincerely,

JOSEPH W. DUNCAN
Director

Senator **Durenberger**. The hearing is adjourned.

[Whereupon, at 4 p.m., the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

Distributing Federal Funds: The Use of Statistical Data

(Preliminary Report)

BY DANUTA EMERY,
VALENCIA CAMPBELL AND STANLEY FREEDMAN[1]

Office of Federal Statistical Policy and Standards
Department of Commerce

Statistical data were instrumental in determining the allocation of $122 billion under 150 domestic assistance programs in fiscal year 1979. Fifteen of these programs each had obligations in excess of $1 billion and significant impact on State and local economies. This report presents preliminary results of an investigation of the use of Federal statistics in computing assistance payments and recommends actions that would improve the quality of statistically based allocations of domestic assistance payments.

During the past 20 years the Federal Government has taken on a new role—that of major provider of funds to support a wide variety of activities. The resultant transformation in fiscal, administrative, and political arrangements has left no government jurisdiction and, indeed, very few persons untouched. In fact, many have suggested that an entirely new intergovernmental structure now exists.[2]

Within this new structure, one-half of the Federal budget is used to fund more than 1,000 domestic assistance programs under different financial arrangements. While many of these programs existed prior to 1960, it was at that time that new areas of public concern, such as employment and training, environmental protection, community development, public safety and others were addressed through assistance programs. The poor, the elderly, businesses, farms, airports, and virtually all general-purpose local governments now receive and spend regular payments from the Federal Government.

Change is never harmonious and expansion in the Federal role has drawn the attention of all three branches of Government. Disputes are so prevalent that the courts have begun to develop a new body of assistance-related law. President Carter has called the domestic assistance system "confusing, with considerable duplication, conflict and overlap;"[3] and Congress has directed the Office of Management and Budget (OMB) to improve the management of the assistance system.[4]

Perhaps the most perplexing aspect of this system involves the use of statistical data and formulas in funding decisions. States and localities, in particular, have demonstrated their sensitivity by claiming, in court, that flaws in statistics cause a loss in the amount of Federal funds they are entitled to receive. The U.S. Court of Appeals has ruled that since the amount of money available under the Comprehensive Employment and Training Program hinged on the methods for determining unemployment statistics, agency action in changing those methods jeopardized recipient rights.[5]

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[1] OFSPS is indebted to the Bureau of the Census and the Energy Information Administration for detailing Ms. Campbell and Dr. Freedman, respectively, to participate in this study, and to Mr. Robert Brown of the Office of Management and Budget for his many important contributions. Mr. Ronald L. Meeks assisted in compiling the survey results and secretarial support was provided by Ms. Barbara J. Wallace. Greatest thanks go to Mr. George E. Hall, Bureau of the Census, who during his tenure at OFSPS laid the foundation for this work.

[2] *The Federal Role in the Federal System: The Dynamics of Growth*, Advisory Commission on Intergovernmental Relations, Washington, D.C. July 1980.

[3] White House Correspondence, Improving the Management of Federal Assistance Programs, June 30, 1980.

[4] Public Law 95-224.

Recent debate about decennial census figures has been acrimonious. Big city mayors, urban Members of Congress and representatives of minority groups have called for an undercount adjustment based on their view that assistance payments are in jeopardy. Since both money and votes are at stake, several mayors have filed suit in Federal court asking for a ruling on adjustment. This "bitter political struggle . . . is symptomatic of what will be even greater struggles ahead over how the government uses its resources and for whom."[6] Notwithstanding the considerable vested interest and controversy surrounding the topic, the total number of programs having statistical allocations, the amount of money involved and the quality of data employed in calculating payments are unknown quantities.

This report, the first of a series, presents preliminary results of an investigation of the use of statistics in computing domestic assistance payments. The aim of the investigation, conducted by the Office of Federal Statistical Policy and Standards (OFSPS), was to document current management practices and to recommend actions that would improve the quality of statistically based allocations of domestic assistance payments. Findings presented here focus on the relationship between statistical series and Federal program obligations and an analysis of statistical factors currently in use. Findings related to data processing, quality control, administrative procedures and formula design will be presented in subsequent reports. All findings presented here are being submitted to Departments and agencies for final verification.

Departments, Agencies, and Programs

The study covered all executive branch Departments and agencies administering domestic assistance programs. On-site personal interviews were the key to understanding the operation of the system and critical in obtaining complete information on all aspects of the topic. The programs included in the study are listed in Appendix A.

There are now 150 domestic assistance programs in 18 Departments and agencies employing a variety of statistical factors to allocate funds.[7] Total funds obligated under these programs in FY 1979 were in excess of $122 billion, or roughly one-fifth of the total Federal budget for that year.

The program listing appearing in Appendix A demonstrates that statistics support funding decisions in several major public policy areas. For example, among the 32 programs administered by the Department of Agriculture, 13 support development of the rural infrastructure, 10 are dedicated to improving nutrition, 3 support agricultural research, 3 provide funds for forestry improvement, 2 support education and 2 are land and water conservation programs.

This breakdown also shows that different objectives are pursued within large agencies and that many agencies administer programs having very similar objectives. If this is the case, a further question is provoked—do programs having similar objectives in fact use the same statistical factors to allocate funds? The answer is yes, in general. Major housing assistance programs are administered by both the Department of Housing and Urban Development (HUD) and the Department of Agriculture. The statistical factors employed—population, poverty/low income households, housing conditions and housing costs—are the same except that data used by Agriculture reflect rural rather than overall conditions. OFSPS found that agency personnel are diligent in selecting and using factors representative of stated program objectives.

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[5] Richard Batterton, Secretary of Employment and Social Service of the State of Maryland vs. F. Ray Marshall, Secretary of the Department of Labor, August 28, 1980.

[6] *The Washington Post*, June 22, 1980, Haynes Johnson.

[7] The most difficult part of the study was identifying programs that use published Federal statistical data regularly in allocating funds or in determining eligibility. No executive or congressional office records or maintains an inventory of statistical factors used in distributing Federal benefits. Within the executive Departments, functional compartmentalization virtually isolates one program from another. Similarly, congressional staff are knowledgeable primarily of program authorizations handled by their committees. Although both OMB and the Library of Congress had examined the use of population data in allocating funds, these studies were out of date and did not cover other variables. The Advisory Commission on Intergovernmental Relations' (ACIR) review of categorical grants focused on aspects of the assistance system other than statistical factors. Since many agency formulas and allocation practices were not published, a literature search would not be effective in obtaining the information. Consequently, each Federal Department and agency functional unit had to be approached individually to discover how allocation processes work and what statistics are involved. The programs covered by this study are those which use ***published*** statistical data; additional Federal programs use a variety of unpublished data in determining recipients' eligibility or allocations.

To avoid confusing nick-names, acronyms, and what constitutes a Federal program, the OMB *Catalog of Federal Domestic Assistance's* identification scheme was used throughout the study. In addition, the network of agency personnel who compile *Catalog* information guided OFSPS through agency mazes to people knowledgeable of data used in programs they administered. Once a program was identified as germane, and initial information on data use confirmed, a personal interview was arranged to obtain full information.

While the Departments of Education and Agriculture use statistics in allocating funds under the greatest number of programs, the Departments of Housing and Urban Development and Health and Human Services obligate more money. However, 15 programs each obligating over $1 billion account for 80 percent of dollars obligated on the basis of statistical factors. Two large programs administered by HUD, Section 8, Housing and Community Development, account for that Department's substantial share (34 percent) of the total obligations. The Department of Health and Human Services administers Medicaid, Title XX Social Services and Maintenance Assistance Programs (AFDC) which together account for a substantial proportion of that Department's formula based obligations. Table 1 lists the number of programs in each Department and associated fiscal year 1979 obligations.[*] Programs having annual obligations in excess of $1 billion are listed in Table 2 on the following page.

TABLE 1

DOLLARS OBLIGATED UNDER FEDERAL ASSISTANCE PROGRAMS USING STATISTICAL DATA BY ALLOCATION OR ELIGIBILITY BY DEPARTMENT

Department or Agency	Number of Programs	Fiscal Year 1979 Obligations (000)
Agriculture	32	$ 18,300,127
Commerce	17	546,956
Education	29	10,039,402
Energy	3	265,750
Health and Human Services	17	23,581,606
Housing and Urban Development	10	37,859,702
Interior	4	497,281
Justice	3	419,483
Labor	5	10,347,763
Transportation	6	9,371,310
Treasury	1	6,895,924
Appalachian Regional Commission	8	166,322
Office of Personnel Management	1	20,000
Community Services Administration	3	416,000
Water Resources Council	1	3,070
Environmental Protection Agency	4	3,479,200
ACTION	3	88,843
Federal Emergency Management Agency	3	35,181
TOTAL	150	$122,333,921

Recipients

Sixty-seven programs provide assistance to State governments, and an additional 71 make payments to both State and local governments. This explains

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[*] All dollar figures appearing in this report are obligations from the *1979 Catalog of Federal Domestic Assistance* published by the Office of Management and Budget, May 1980. Some of the figures may have been revised subsequent to publication. Obligations are funds legally set aside to be spent during a period that will require outlays during the same or *some future* period. Data on Federal outlays are based on checks issued and payments inkind and represent actual spending. In some programs, such as the Low Income Housing Assistance Programs administered by HUD, differences between annual obligations and outlays are large, while in other programs differences are slight. Interpretations drawn from this study should therefore take these definitions into account.

TABLE 2
ASSISTANCE PROGRAMS EMPLOYING DATA WITH OBLIGATIONS EXCEEDING $1 BILLION ANNUALLY

CFDA Number	Name of Program/Agency	Fiscal 1979 Obligations (000)
14.156	Lower Income Housing Assistance Program (Section 8) (HUD)	$ 25,367,704
13.714	Medical Assistance Program (Medicaid Title XIX) (HHS)	11,804,429
17.232	Comprehensive Employment and Training Program (CETA) (Labor)	9,253,000
20.205	Highway Research, Planning and Construction (Federal Aid Highway Program) (DOT)	7,600,000
21.300	General Revenue Sharing (Treasury)	6,895,924
13.808	Assistance Payments—Maintenance Assistance State Aid (AFDC) (HHS)	6,668,620
14.146	Low Income Housing—Assistance Program Public Housing (HUD)	6,613,480
10.551	Food Stamps (Agriculture)	5,914,000
66.418	Construction Grants for Wastewater Treatment Works (EPA)	3,400,000
10.410	Low to Moderate Income Housing Loans (Agriculture)	2,867,000
13.642	Social Services for Low Income and Public Assistance Recipients—Title XX (HHS)	2,818,300
14.218	Community Development Block Grants/ Entitlement Grants (HUD)	2,812,920
13.428	Educationally Deprived Children—Local Educational Agencies (Title I, ESEA—Part A Sub-Part 1) (ED)	2,625,593
13.539	Basic Educational Opportunity Grant Program (Basic Grants) (ED)	2,375,000
10.555	National School Lunch Program (Agriculture)	1,855,131
	TOTAL	$98,871,101

the keen interest State and local officials have in the statistical factors used to calculate their share of payments. It also demonstrates the need for accurate substate data to calculate equitable payments for the programs which provide funds to local governments. Only 9 programs, including various loans from the Farmers Home Administration, business assistance from the Department of Commerce and housing assistance from HUD provide funds to individual recipients.

Types of Assistance

Nearly all of the programs using data for allocating funds provided financial assistance; only a few provided nonfinancial assistance.[9] Eighty-five percent are grant programs divided between formula and project grant categories. Eight percent are loan programs accounting for a significant amount of multiyear commitments. Data on types of financial assistance are shown in Table 3.

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[9] OMB classifies each assistance program according to the form in which the assistance is transmitted from the Federal Government and is initially received by the applicant. Federal benefits and services are provided through 15 financial and non-financial types of assistance.

TABLE 3

ASSISTANCE PROGRAMS USING DATA FOR ALLOCATION OR ELIGIBILITY BY TYPE OF ASSISTANCE

Type of Assistance	Number	Percent
Formula Grants	75	50
Project Grants	53	36
Direct Payments for Specified Use	9	6
Direct Loans	5	3
Guaranteed/Insured Loans	8	5
TOTAL	150	100

Definitions and Documentation

Although many people associate formula grants with statistical data, OMB definitions pertaining to formula grants and other types of assistance have nothing at all to do with the use of data. OMB's formula grant definition pertains to activities of a continuing nature funded in accordance with a distribution formula prescribed by law or administrative regulation. Many formulas contain no statistical data, but are based on programmatic or financial experience. Of the 109 assistance programs listed in OMB's *Catalog* as formula grants, only 48 use statistical data. In response to the survey, the Veterans Administration explained a typical nonstatistical formula: "Grants to State homes are shown . . . as formula grants because specific per diem rates are paid for the care of Veterans."

Thus, while it would be incorrect to conclude that all formula grants involve statistics, it would also be incorrect to conclude that project grants do not employ statistical allocations. The OMB definition of project grants describes funding for fixed or known periods, for specific projects. However, statistical data are used not only in allocations in a significant number of programs in this category, but also in determinations of eligibility. Applications for the Department of Commerce's Economic Development Project Grants are entertained only after an area is judged to be distressed using statistical criteria.

The extent to which statistical indicators determine the pattern of assistance payments is obscure because of the overall absence of documentation. The *Catalog of Federal Domestic Assistance* does not receive full information despite clear reporting requirements. OMB asks for "The factors (including percentages) prescribed by law or administrative regulation used to allocate sums of money among States, their subdivisions or other entities." OMB further states "Besides those programs that list formula grants as the type of assistance, this may also apply to project grants, subsidies and loan programs that use a formula to determine the amount of the award." Agencies, however, are not in compliance. Among the formula grant programs that the survey identified as having statistical fund allocations, one-fourth failed to report the existence of a formula to OMB while others reported the existence of a formula but did not specify the factors involved. The lack of central documentation and the variability in agency documentation cause a large part of the uncertainty concerning how statistics affect assistance payments.

Allocation and Eligibility

Statistics enter the funding process in two ways: for allocating program funds and for determining recipient eligibility for program participation. In some programs statistics support both decisions.

Allocation determines the pattern of fund distribution, or how much money goes where. The simplest allocation formulas involve a calculation of a State's share of dollars based on that State's share of total U.S. population. However, most allocation formulas are far more complex, involving more than one statistical factor and constraints such as minimum and maximum awards. The General Revenue Sharing formula epitomizes this complexity—it involves eight statistical factors, several equations, both minimum and maximum constraints, and would be impossible to calculate without a computer.

Eligibility, on the other hand, involves the use of data to determine if a recipient is entitled to apply for assistance. For example, HUD uses six statistical criteria—age of housing, poverty rate, population growth, per capita income growth, unemployment rate and employment growth—to determine eligibility for its Urban Development Action Grant Program. An applicant's eligibility is considered through a system that classifies it as either meeting or not meeting *each* criterion. In contrast, the Department of the Interior bases eligibility for its Urban Parks and Recreation Recovery Program on a community's score that is a *combination* of six statistical factors—population under 18 years and 60 years and over, population density, percent persons with incomes below 125 percent of poverty, percent unemployed, change in per capita income, and percent of households without automobiles available.

Allocation and eligibility illustrate the ways statistics are used to determine who gets how much money. Nevertheless, differences in formula equations and eligibility procedures can be as important as data used in determining where the money goes.

Use of Factors: Singly or in Combination

The impact of any single statistical factor such as population on assistance payments must be considered relative to overall formula structure. Usually, structure involves more than one statistical factor and constraints such as minimum and maximum awards and hold-harmless provisions. Thirty-four programs use a single factor in calculating awards. In all but 5 of these programs total population is the factor, and payments under these programs are most likely to be affected by increases or decreases in population counts.

The more common practice among agencies is to combine two or more statistical factors as documented in Table 4. Combining factors can have the effect of either diluting or reinforcing the influence of any one item. Simple statistical tests, such as correlation analyses, can reveal the relationship(s) between and among factors. Relatively few Federal agencies have performed such tests.

TABLE 4

NUMBER OF STATISTICAL FACTORS BY PROGRAM

Number of Statistical Factors	Number of Assistance Programs
One	34
Two	30
Three	29
Four	30
Five or more	27
TOTAL	150

What Factors Are Important?

The 462 factors were grouped to permit an analysis of their use in implementing public policy objectives.[10] Nine categories were developed, as presented in Table 5; these categories are amplified in Appendix C which also reveals the relative importance of factors through associated obligations.[11]

TABLE 5

STATISTICAL FACTORS USED IN ALLOCATION FORMULAS AND ELIGIBILITY CRITERIA

Type of Factor	Number of Times Used:[1] Allocation	Eligibility
Economic	96	56
Education	21	0
Energy	9	0
Environment	52	2
Health	8	0
Housing	16	4
Population	109	26
Transportation	14	0
Administrative	36	1

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[1] There were seven programs in which population factors were used for both allocation and eligibility.

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[10] Although a certain amount of interpretation was required for this analysis, ample background material was available. Program objectives were described in the *Catalog of Federal Domestic Assistance* and in literature supplied by survey respondents. In addition, respondents volunteered information on the legislative history of programs and rationale for factor selection and use.

For analysis, certain conventions were adopted for factors that could be assigned to more than one category. For example, any factor measuring income was assigned to the economic category. Each factor was assigned only once and if the same factor was used at two levels of geography in the same program (Total U.S. population and State population, for example), it was coded as one factor at the lower geographic level.

[11] The expanded breakdown of categories presented in Appendix C also details the number of assistance programs using the factors and the total obligations for those programs. The obligations are presented to show the *relative* importance of factors employed in domestic assistance funding decisions.

Classification of statistical factors produced a few surprises—the large number of economic factors used for both allocation and eligibility, the extensive reliance on administrative data, and the increasing use of data that measure physical conditions. Population and population-related statistics, such as per capita income, remain dominant in allocations, but various measures of economic conditions compete in concept and in importance.

A recent study has shown that, although overall Federal expenditures are highly correlated with population, there are differences in this relationship from Department to Department and greater differences from program to program.[12] For example, the population-expenditure relationship hardly exists at all for the Department of the Interior. At the program level, Federal outlays are quite unstable through time because of the introduction of new programs and because of administrative discretion. Results of the OFSPS study indicate that the relationship between the population statistics and obligations is not clearcut. Although some have suggested the presence of a causal relationship between assistance payments and population, that conclusion needs further study.

There is considerable variety among economic factors in use. In some programs, changes in economic conditions were measured; in others the severity and duration of adverse conditions, such as high levels of unemployment, were used as factors. Economic factors are used as frequently as population for allocation purposes and more frequently for eligibility determination. Within the economic category, measures of income predominate for both purposes.

Land area statistics influence allocations under 21 programs related to the improvement of physical conditions where a fair share of funds would be commensurate with geographic area. Major programs in this group involve conservation, coastal zone management, regional planning, roads and highways, and waste-water systems.

Environmental factors are as heterogeneous as the 11 programs that employ them. The Environmental Protection Agency's Construction Grants for Wastewater Treatment Works dominate the group financially. Other programs providing substantially smaller assistance payments support civil defense, urban transit, commercial fisheries and coping with the impact of offshore energy development. What is apparent here is that a group of relatively new programs with diverse objectives are using newer statistical series to allocate funds.

Administrative factors, such as client characteristics, are important in fund allocation. It is difficult to assess the impact of these factors because as a group it is more heterogeneous and less reliable than any of the others. Consequently, these factors will be covered in detail in subsequent reports.

Some factors are employed to insure that each State receives a share of available funds: Total land area and total population appear to represent this theme. Other more specific variables, rural population with income below the poverty level, or data on heating and cooling degree days, appear to relate to stated program objectives.

Overall, program managers stated that they were using the best data available consistent with program objectives. Only a few expressed dissatisfaction with factors in use. Where standard Federal statistics were not available, agencies used ingenuity in developing measures reflective of program objectives.

Which Statistical Collection Programs Are Most Important In Allocating Funds?

A major goal of this study was to rank data collection programs according to their importance, that is, their association with large obligations in allocating funds.[13] To develop the information, the

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[12] Thomas J. Anton, Jerry P. Cawley, and Kevin L. Kramer, *Moving Money* (Cambridge, Mass.: Oelgeschlager, Gunn and Hain, 1980).

[13] A landmark study conducted by the Library of Congress in 1978 demonstrated the importance of population data. (Barbara O. Maffei, *The Use of Population Data in Federal Assistance Programs*, Committee on Post Office and Civil Service, U.S. House of Representatives.) In 1979, the Commission on Employment and Unemployment Statistics called further attention to the topic, faulting the use of unemployment statistics in allocating CETA funds. ". . . the Bureau of Labor Statistics and State agencies have had to resort to patchwork estimation methods. As a result, Federal Aid Allocations . . . are often based on extremely inaccurate statistics." (Sar A. Levitan, *Counting the Labor Force*, National Commission on Employment and Unemployment Statistics, Washington, D.C.) Other important studies on this topic are: Charles A. Ellett, "A Study of Data Requirements of Population-Based Formula Grants," *Statistical Reporter*, November 1976; and Friedrich J. Grasberger, *A Typol-*

OFSPS survey included a series of questions on the source of statistical factors discussed in the preceding section. Factors and their sources could then be linked to assistance programs and their obligations. Statistical collection programs associated with the largest obligations could thus be targeted for improvement.[14]

The most important limitation of this approach is the inability to determine what share of obligations can be attributed to *each* factor. This could not be accomplished without performing a series of statistical analyses on each allocation formula or set of eligibility criteria. Such an effort, while possible, would require resources far beyond those available for this study. Nevertheless, for statistical policy purposes, the relative importance of statistical collection programs would be ascertained provided that assistance agencies knew the source of their data.

Unfortunately, OFSPS found the overall quality of formula documentation poor, although a few agencies did supply completely clear, published descriptions of procedures and data they used to compute assistance payments. The most typical kind of documentation consisted of a brief description of data elements and annual assistance payments published in the *Federal Register*, accompanied by statutory language mandating a formula if it existed. In general, agencies were uncertain of the primary source of data used, and some modified primary data before calculating payments. Little was known about software used in computer calculations. Finally, it would be extremely difficult if not impossible to deduce formula equations and reproduce assistance payments from published material because the whole story is not documented. The sequence of calculations, presence of discretionary and mandatory set-asides, obscure hold-harmless and transition provisions, recalculations, treatment of special recipients and trust territories affect the formula outcome. Nevertheless, the relative importance of data collection programs according to their use in assistance programs has been calculated from the survey.

Appendix B presents data on sources of statistical factors used as eligibility criteria or in allocation formulas and the agencies publishing the data. The table also shows the number of assistance programs using the source and the total dollars obligated by all the programs using the source.[15] Since over 80 percent of the programs use more than one factor, their obligations may be recorded several times. Therefore, it is not possible to add obligations recorded on this table.

The following describes key series used in allocation and eligibility along with the most frequently used factors. Information on factors from series not covered here can be obtained from OFSPS.

Bureau of the Census: Decennial Census of Population and Housing ($78.4 Billion)

A variety of factors from the Decennial Census of Population and Housing are associated with the largest amount of domestic assistance obligations. These obligations come from 69 programs, including the Department of Housing and Urban Development's two largest housing assistance programs, the Farmer's Home Administration's Low to Moderate Income Housing Loan program, the Department of Transportation's Highway Research, Planning and Construction Program, General Revenue Sharing, and the Comprehensive Employment and Training Program. All of these programs are among those obligating over one billion dollars annually and contribute to the Census' importance as a source of data for calculating domestic assistance payments.

Decennial census population counts impact assistance payments two ways—both indirectly. First, the results of the OFSPS study revealed that census population counts are used for allocation and eligibility under 20 assistance programs. There is greater impact on eligibility when it is based on population thresholds below which program participation is precluded. In allocation formulas, the impact may be offset by the presence of other factors and administrative constraints.

The second way population counts impact assistance payments is through their use as denominators and control totals in other statistical

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ogy and Review of Federal Categorical Grants-In-Aid Formulas in Fiscal Year 1975 (Rochester, New York: Center for Governmental Research, Inc., 1978).

[14] Even if a statistical factor were published in several different reports, the statistical agency publishing the report could easily identify which program generated the factor.

[15] If a factor were used more than once in the same program, it was tabulated only once at the lowest level of geography.

programs.[16] Factors most important for allocations and eligibility and affected in this way by the census are unemployment rates published by the Bureau of Labor Statistics, per capita income statistics published by the Bureau of Economic Analysis, and post-census population estimates and per capita income statistics published by the Bureau of the Census. Census statistical factors and their frequency of use are shown in Table 6. The number of assistance programs cannot be added because several programs used more than one factor from the same source.

TABLE 6
DECENNIAL CENSUS OF POPULATION AND HOUSING FACTORS AND FREQUENCY OF USE

Factor	Number of Assistance Programs Using Factor
Total Population	20
Population by Age	11
Population by Race	1
Migration	6
Density	4
Urban Population	1
Rural Population	13
Urbanized Population	3
SMSA Population	1
Farm Population	4
Income	32
Land Area	14
Housing Condition	12
Educational Attainment	1

Bureau of the Census: Current Population Reports ($54.4 Billion)

Most assistance programs (48) using total population for fund allocation rely on the timely estimates published by the Bureau of the Census. Major programs include: Title XX—Social Services, Low Income—Public Housing, Section 8 Housing, Community Development Block Grants, General Revenue Sharing, and Grants for Wastewater Treatment Works. Current Population Reports statistical factors and their frequency of use are shown in Table 7.

TABLE 7
CURRENT POPULATION REPORTS FACTORS AND FREQUENCY OF USE

Factor	Number of Assistance Programs Using Factor
Total Population Estimates	48
Population by Age	16
SMSA Population	2
Per Capita (money) Income	4
Median Family Income	3
Poverty/Low Income	6

Bureau of Labor Statistics: Monthly Labor Review ($52.3 Billion)

The Consumer Price Index and the Home Purchase Component are published in the *Monthly Labor Review*. These data are used in computing assistance payments under seven programs, having obligations exceeding $1 billion per year. The five programs are: Food Stamps, National School Lunch Program, the Special School Milk Program for Children, the Lower Income Housing Assistance (Section 8) Program, and the Low Income Housing Assistance (Public Housing) Program.

Bureau of the Census: Annual Housing Survey ($32.8 Billion)

Income statistics from the Annual Housing Survey are used to compute a median family income factor for four major HUD low income housing assistance programs. Since these programs are associated with large multi-year obligations, the statistical series takes on major importance.

Bureau of Economic Analysis: State and County Personal Income ($32.5 Billion)

Twenty-two assistance programs use income data from the *State and County Personal Income* series. Nineteen programs use per capita personal income as an indicator of the relative wealth of an area: the lower the per capita income the greater the assistance payment. Major assistance programs using this statistic are the National School Lunch Program, the Medical Assistance Program (Medicaid), Assistance Payments-Medical Assistance Program-StateAid, Social Services for Low Income and Public Assistance Recipients—Title XX, and General Revenue Sharing.

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[16] Courtenay M. Slater, "The Impact of Census Undercoverage on Federal Programs," Conference on the Census Undercount, February 26, 1980.

Social Security Administration: Social Security Bulletin ($12.2 Billion)

Data on State Government expenditures for assistance programs are used in calculating awards for the Medical Assistance Program (Medicaid) which alone accounts for the importance of this program, although two other assistance programs use the data.

Bureau of the Census: Survey of Income and Education ($14.6 Billion)

Of the eight assistance programs using factors from this source, six used measures of poverty, two used income. The major assistance program using these data was the Comprehensive Employment and Training (CETA) program.

Bureau of Labor Statistics: State, County and Selected Employment ($10.8 Billion)

Each month the Bureau of Labor Statistics publishes estimates of the labor force, employment and unemployment. Fourteen assistance programs use these statistics: twelve programs use unemployment rates, one uses employment, and one civilian labor force data. The Comprehensive Employment and Training (CETA) program uses statistics on unemployment under eight different statistical formulas obligating $9.2 billion to recipients—the prime sponsors at State and sub-State levels. The second major user of these statistics is the Economic Development Administration which uses unemployment statistics as eligibility criteria under seven EDA titles.

Conclusions

This report has presented preliminary findings of an investigation of the use of Federal statistics in distributing domestic assistance payments. Certain findings suggest the need for changes that would lead to better management of the domestic assistance system, better public understanding of how the system operates and more accurate allocations. These changes would be even more critical should smaller categorical programs be combined to form larger programs funded under block grants. If this occurred, Federal payments would be based on fewer factors, algorithms, and less administrative discretion. Conclusions presented here are based on survey findings.

Government-wide standards for documentation of allocation formulas and eligibility criteria do not exist. Assistance agencies do not record their practices and procedures in a systematic way. Consequently, questions on who gets how much money and why cannot be answered except on an ad hoc basis. In addition, many formulas involve complex calculations that may or may not be desirable. Without standard documentation, it is impossible to know what procedures should be improved. Therefore, *standards for documentation of formulas and eligibility criteria should be developed* as a first step in improving the management of the assistance system. *Agencies should be instructed, through an OMB and OFSPS joint circular, to prepare documentation according to the newly developed standards. OMB and OFSPS should incorporate the documentation into an ongoing system maintained in a central government location.*

At the present time, there is no process for technical review of statistical provisions in allocation formulas, nor is there an adequate mechanism for a coordinated response to Congressional inquiries on the use of statistical data in Federal assistance funding decisions. *Legislative and executive proposals for new formulas and eligibility criteria should be reviewed by OFSPS to assess impacts on the statistical system and to insure that appropriate data are employed in allocation and eligibility formulas.* Under this proposal, originating agencies would submit to OFSPS for clearance proposed legislation and administrative regulations containing provisions for statistically-based fund allocations and eligibility criteria. Relevant findings concerning the appropriateness of statistical factors would be transmitted to the originating agencies.

Linkages between the statistical system and the assistance system are as variable as the documentation of statistical formulas and eligibility criteria. Twenty-three agencies produce data used for allocation and eligibility and 18 Departments and agencies use the data in calculating assistance payments. Financial cycles and data publication cycles are not synchronous. Two assistance programs may base allocations on the same factor but for different years. In addition, some assistance agencies produce data very similiar in concept to those produced by statistical agencies. Finally, assistance agencies are generally unaware of data limitations or help they can obtain from collection agencies. Coordination between the two systems should be improved.

Statistical agencies should give priority to improving data series which are used in allocating Federal funds. Chief among these series are the Decennial Census of Population and Housing, the Census population and income estimates, the Consumer Price Index, the State and County Personal Income Series, and State, County and Selected Employment Statistics. The Statistical Policy Coordination Committee, a cabinet committee responsible for guiding the establishment of priorities for the Federal statistical system, has agreed that agencies should give priority in their FY 1983 budget proposals, where appropriate, to improving these statistical series which are used in Federal allocation decisions. In addition to improving series, *statistical agencies should develop standard documentation which will show the limitations of series with respect to their use in Federal fund allocation formulas.* In the absence of such documentation, those responsible in the legislative and executive branches are largely without recourse to determine the appropriateness of various statistical series for meeting the intended targets of fund distribution programs.

Readers' comments on the recommendations suggested here are solicited to enrich the statistical perspective. Survey findings are being returned to assistance agencies for verification and comment. Comments on these preliminary findings would be welcome. Later reports will provide additional analysis of the verified agency submissions.

Appendix A

DOMESTIC ASSISTANCE PROGRAMS HAVING STATISTICALLY BASED FUNDING BY DEPARTMENT AND CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER

Department of Agriculture

10.406	Farm Operating Loans
10.407	Farm Ownership Loans
10.410	Low to Moderate Income Housing Loans
10.415	Rural Rental Housing Loans
10.417	Very Low-Income Housing Repair Loans and Grants
10.418	Water and Waste Disposal Systems for Rural Communities
10.423	Community Facilities Loans
10.424	Industrial Development Grants
10.427	Rural Rental Assistance Payments
10.429	Above Moderate Income Housing Loans
10.551	Food Stamps
10.553	School Breakfast Program
10.554	Equipment Assistance for School Food Service Programs
10.555	National School Lunch Program
10.556	Special Milk Program for Children
10.557	Special Supplemental Food Programs for Women, Infants and Children
10.558	Child Care Food Program
10.559	Summer Food Service Program for Children
10.560	State Administration Expenses for Child Nutrition
10.564	Nutrition Education and Training Program
10.661	Youth Conservation Corps--Grants to States (Youth Conservation Corps)
10.663	Adult Conservation Corps—Grants to States
10.664	Cooperative Forestry Assistance
10.850	Rural Electrification Loans and Loan Guarantees
10.851	Rural Telephone Loans and Loan Guarantees
10.852	Rural Telephone Bank Loans
10.877	Cooperative Forestry Research
10.878	Payments to Agricultural Experiment Stations Under Hatch Act
10.879	Rural Development Research
10.880	Payments to 1890 Land-Grant Colleges and Tuskegee Institute
10.881	Cooperative Extension Service
10.882	Higher Education-Land-Grant Colleges and Universities

Department of Commerce

11.300	Economic Development—Grants and Loans for Public Works and Development Facilities
11.301	Economic Development—Business Development Assistance
11.302	Economic Development—Support for Planning Organizations
11.303	Economic Development—Technical Assistance
11.304	Economic Development—Public Works Impact Projects
11.305	Economic Development—State and Local Economic Development Planning

Appendix A (continued)

11.306	Economic Development — District Operations Assistance
11.307	Special Economic Development and Adjustment Assistance Program—Long Term Economic Deterioration
11.311	Special Economic Development and Adjustment Assistance Program—Sudden and Severe Economic Dislocation
11.407	Commercial Fisheries Research and Development
11.418	Coastal Zone Management Program Development
11.419	Coastal Zone Management Program Administration
11.421	Coastal Energy Impact Program—Formula Grants
11.422	Coastal Energy Impact Program—Planning Grants
11.423	Coastal Energy Impact Program—Loans and Guarantees
11.424	Coastal Energy Impact Program—Environmental Grants
11.800	Minority Business Development—Management and Technical Assistance

Department of Education

13.400	Adult Education—Grants to States
13.418	Supplemental Educational Opportunity Grants (SEOG)
13.427	Program for Education of Handicapped Children in State Operated or Supported Schools (Public Law 89-313)
13.428	Educationally Deprived Children—Local Educational Agencies (Title I, ESEA—Part A Sub-Part 1)
13.429	Educationally Deprived Children—Migrants (Migrant Education)
13.431	Educationally Deprived Children in State Administered Institutions Serving Neglected or Delinquent Children (Title I ESEA — Neglected or Delinquent)
13.449	Handicapped Preschool and School Programs (Part B, Education of the Handicapped Act)
13.463	Higher Education Work-Study (College Work-Study Program)
13.464	Library Services and Construction Act (LSCA—Title I)
13.465	Library Services—Interlibrary Cooperation (LSCA—Title III)

Appendix A (continued)

13.471	National Direct Student Loans (Direct Student Loans)
13.478	School Assistance in Federally Affected Areas—Maintenance and Operation (Impact Aid)
13.491	University Community Service—Grants to States (Community Service and Continuing Education Programs)
13.493	Vocational Education—Basic Grants to States
13.494	Vocational Education—Consumer and Homemaking
13.495	Vocational Education—Program Improvement and Supportive Service
13.499	Vocational Education—Special Needs (Special Program for Disadvantaged
13.500	Vocational Education—State Advisory Councils
13.534	Indian Education—Grants to Local Educational Agencies (Indian Education—Part A)
13.539	Basic Educational Opportunity Grant Program (Basic Grants)
13.540	Higher Education—Veterans' Cost of Instruction Program (VCIP)
13.548	Grants to States for State Student Incentives (State Student Incentive Grant Program)
13.550	State Postsecondary Education Commissions Program—Intrastate Planning (Section 1203 (a) Program)
13.570	Libraries and Learning Resources
13.571	Improvement in Local Educational Practice
13.585	Educational Information Centers
13.596	Career Education State Allotment Program
13.624	Rehabilitation Services and Facilities—Basic Support (Basic Support Program)
13.649	Rehabilitation Services and Facilities—Innovation and Expansion

Department of Health and Human Services

13.210	Health Incentive Grants for Comprehensive Public Health Services
13.211	Crippled Children's Services
13.232	Maternal and Child Health Services
13.257	Alcohol Formula Grants
13.269	Drug Abuse Prevention Formula Grants

Appendix A (continued)

Appendix A (continued)

13.293	State Health Planning and Development Agencies
13.294	Health Planning—Health Systems Agencies
13.600	Administration for Children, Youth and Families—Head Start
13.628	Child Abuse and Neglect Prevention and Treatment
13.630	Development Disabilities—Basic Support and Advocacy Grants
13.633	Special Programs for the Aging, Title III—Parts A and B—Grants for States and Community Programs on Aging
13.635	Special Programs for the Aging, Title III—Part C—Nutrition Services
13.642	Social Services for Low Income and Public Assistance Recipients
13.645	Child Welfare Services—State Grants
13.646	Work Incentive Program
13.714	Medical Assistance Program
13.808	Assistance Payments-Maintenance Assistance (State Aid)

Department of Housing and Urban Development

14.105	Interest Reduction—Homes for Lower Income Families
14.146	Low Income Housing Assistance Program (Public Housing)
14.147	Low Income Housing Homeownership for Low Income Families
14.149	Rent Supplements—Rental Housing for Lower Income Families
14.156	Lower Income Housing Assistance Program
14.157	Housing for the Elderly or Handicapped
14.203	Comprehensive Planning Assistance
14.218	Community Development Block Grants/ Entitlement Grants
14.219	Community Development Block Grants/ Small Cities Program
14.221	Urban Development Action Grants

Department of the Interior

15.400	Outdoor Recreation—Acquisition, Development and Planning
15.417	Urban Park and Recreation Recovery Program
15.605	Fish Restoration
15.611	Wildlife Restoration

Department of Justice

16.500	Law Enforcement Assistance—Comprehensive Planning Grants
16.502	Law Enforcement Assistance—Improving and Strengthening Law Enforcement and Criminal Justice
16.516	Juvenile Justice and Delinquency Prevention—Allocation to States

Department of Labor

17.207	Employment Service
17.230	Migrant and Seasonal Farm Workers
17.232	Comprehensive Employment and Training Programs
17.234	Employment and Training Programs—Indians and Native Americans
17.235	Senior Community Service Employment Program

Department of Transportation

20.102	Airport Development Aid Program
20.205	Highway Research, Planning and Construction
20.[illegible]	Local Rail Service Assistance
20.505	Urban Mass Transportation Technical Studies Grants
20.507	Urban Mass Transportation Capital Operating Assistance Formula Grants
20.600	State and Community Highway Safety

Department of the Treasury

21.300	State and Local Government Fiscal Assistance General Revenue Sharing

Appalachian Regional Commission

23.002	Appalachian Supplements to Federal Grant-In-Aid (Community Development)
23.004	Appalachian Health Programs
23.005	Appalachian Housing Project Planning Loan, Technical Assistance Grant and Site Development and Off-Site Improvement Grant: State Appalachian Housing Programs
23.008	Appalachian Local Access Roads
23.010	Appalachian Mine Area Restoration
23.011	Appalachian State Research, Technical Assistance, and Demonstration Projects
23.012	Appalachian Vocational and Other Education Facilities and Operations
23.013	Appalachian Child Development

Office of Personnel Management

27.012	Intergovernmental Personnel Grants

Appendix A (continued)

Community Services Administration

49.002	Community Action
49.005	Community Food and Nutrition
49.015	Summer Youth Recreation

Water Resources Council

65.001	Water Resources Planning

Environmental Protection Agency

66.432	State Public Water System Supervision Program Grants
66.433	State Underground Water Source Protection Program Grants
66.451	Solid and Hazardous Waste Management Program Support Grants
66.418	Construction Grants for Wastewater Treatment Works

Appendix A (continued)

ACTION

72.001	The Foster Grandparent Program
72.002	Retired Senior Volunteer Program
72.003	Volunteers in Service to America

Department of Energy

81.041	State Energy Conservation
81.042	Weatherization Assistance for Low Income Persons
81.052	Energy Conservation for Institutional Buildings

Federal Emergency Management Administration

83.002	State Fire Incident Reporting Assistance
83.200	Civil Defense—State and Local Management
83.204	Earthquake and Hurricane Loss Study and Contingency Planning Grants

Appendix B

SUMMARY OF STATISTICAL SOURCES USED IN DETERMINING ALLOCATION OF FUNDS AND PROGRAM ELIGIBILITY UNDER FEDERAL DOMESTIC ASSISTANCE PROGRAMS

Department/Agency Producing Source	Statistical Sources	Total Number of Domestic Assistance Programs Using Source in Funding Decisions	Total Dollars Obligated in Fiscal 1979 for Program Using Source[1]
Department of Agriculture			
Economics, Statistics, and Cooperatives Service	Agricultural Statistics	9	$ 8,470,331,000
	Farm Income Statistics	2	1,625,000,000
	Farm Population Estimates (with Census)	2	1,625,000,000
Food and Nutrition Service	Annual Report of Meal Service in Schools	2	3,426,200,000
Forest Service	An Analysis of the Timber Situation in the U.S.: 1952–2030	1	9,500,000
	Timber Resources Review	1	80,860,000
Science and Education Administration	Current Research Information System	1	9,500,000
Soil Conservation Service	Soil Conservation	1	80,860,000
Department of Commerce			
Bureau of Economic Analysis	State and County Personal Income	28	32,472,029,945

Appendix B (continued)

Department/Agency Producing Source	Statistical Sources	Total Number of Domestic Assistance Programs Using Source in Funding Decisions	Total Dollars Obligated in Fiscal 1979 for Program Using Source[1]
Bureau of the Census	Annual Housing Survey	4	32,765,184,000
	Area Measurement Reports	5	186,691,000
	Census of Agriculture	3	1,706,349,000
	Census of Governments	1	20,000,000
	Census of Manufacturers	2	588,197,000
	Census of Retail Trade	1	580,597,000
	Census of Selected Service Industries	1	7,600,000
	County Business Patterns	3	1,413,140,000
	Current Population Reports	70	54,402,692,671
	Decennial Census of Population and Housing	69	78,393,709,645
	Farm Population Estimates with ESCS)	2	1,625,000,000
	Government Employment (Census of Governments)	1	20,000,000
	Minority Owned Businesses	1	17,525,000
	OMB Poverty Guidelines	12	9,020,055,000
	Public Employment	3	590,000,000
	Quarterly Summary of State and Local Tax Revenues	1	6,895,924,000
	Salary Data Report	1	550,000,000
	Survey of Income and Education	9	14,565,604,367
National Oceanographic and Atmospheric Administration	Climatography of the United States	2	218,750,000
	Climatological Data	1	225,000
	The Coastline of the United States	2	23,470,000
	Fishery Statistics of the United States	1	5,000,000
Department of Education National Center for Education Statistics	Digest of Educational Statistics	3	3,593,800,600
	Fall Enrollment in Higher Education	4	1,277,350,000
	Revenues and Expenditures	7	4,364,067,176
	Statistics of Local Public School Systems	1	26,200,000
	Statistics of Public Elementary and Secondary Day Schools	1	550,000,000

Appendix B (continued)

Department/Agency Producing Source	Statistical Sources	Total Number of Domestic Assistance Programs Using Source in Funding Decisions	Total Dollars Obligated in Fiscal 1979 for Program Using Source[1]
Department of Health and Human Services			
Administration for Children, Youth and Families	Day Care Centers in the U.S.—A National Profile	1	26,200,000
Center for Disease Control	Reported Mortality and Morbidity in the United States	1	40,000,000
National Center for Health Statistics	Vital Health Statistics	4	913,400,000
Public Health Service	Index of Frequent Heavy Drinking and Current Tangible Consequences	1	56,800,000
Social Security Administration	Characteristics of State Plans for AFDC Under the Social Security Act—Title IVA	1	680,000,000
	Continuous Work History Sample: Description and Content	1	81,349,000
	Social Security Bulletin	3	12,206,487,000
	State Expenditures for Public Assistance Programs (Approved Under Titles I, IV-A, X, XIV, XIX of the Social Security Act)	1	6,668,620,000
Department of the Interior			
Bureau of Indian Affairs	Annual Report of Indian Land	1	29,500,000
	Indian Population Labor Force	2	6,969,138,600
Bureau of Land Management	Public Land Statistics	1	18,000,000
Bureau of Mines	Mineral Industry Services: Directory of Company Production of Salts in the United States	1	7,600,000
Geological Survey	Boundaries of the United States	2	7,603,070,130
	Outer Continental Shelf Statistics—Sales or Lease Production	1	41,323,000
	Outer Continental Shelf Statistics	1	41,323,000
	A Probabilistic Estimate of Maximum Acceleration		

Appendix B (continued)

Department/Agency Producing Source	Statistical Sources	Domestic Assistance Programs Using Source in Funding Decisions	Total Dollars Obligated in Fiscal 1979 for Program Using Source[1]
	of Rock in the Contiguous United States	1	225,000
Department of Labor Bureau of Labor Statistics	Monthly Labor Review	9	52,339,754,000
	Producer Prices and Price Indexes	3	480,200,000
	State County and Selected Employment	14	10,805,500,000
	Urban Family Budgets and Comparative Indexes for Selected Urban Areas	1	81,349,000
Employment and Training Administration	Employment Service Automated Reporting Systems	2	1,091,324,000
Department of Transportation Federal Highway Administration	Highway Statistics	1	7,600,000,000
Department of the Treasury Office of Revenue Sharing	General Revenue Sharing, Initial Data Elements—Period 11	1	6,895,924,000
Environmental Protection Agency	Review and Assessment of Deep Well Injections of Hazardous Waste	1	7,600,000
	Water Problems Associated with Oil Production in the United States	1	7,600,000
Records Supplied by State		15	$10,191,396,711
Miscellaneous Includes: Agency inventories; prior year funding; data from private sources; field records; metropolitan planning agencies; undocumented data, etc.		27	28,085,475,595

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[1] Source: *1979 Catalog of Federal Domestic Assistance*, Office of Management and Budget, Washington, D.C., May 1980.

Source: To arrive at the information in this table, the OFSPS survey included a series of questions on statistical factors and the *source* of the factors used in each program. Source was defined as the name of the publication or computer tape, not just the name of the publishing agency. Since factors could be associated to assistance programs and assistance programs to their obligations a link was made between statistical sources and domestic assistance obligations.

The dollar figures that appear in this table are obligations from the *1979 Catalog of Federal Domestic Assistance* published by the Office of Management and Budget, May 1980. Some of the figures may have been revised subsequent to publication. Obligations are funds legally set aside to be spent during a period that will require outlays during the same or *some future* period. Data on Federal outlays, not reported here, are based on checks issued and payments in-kind and represent actual spending. In some programs, such as the Low Income Housing Assistance Programs administered by HUD, differences between annual obligations and outlays are large, while in other programs differences are slight. Interpretations drawn from this table should therefore take these definitions into account.

Appendix C

STATISTICAL FACTORS, THE NUMBER OF PROGRAMS USING THEM, AND PROGRAM OBLIGATIONS

Type of Factors	Number of Assistance Programs	Dollars Obligated in FY 1979 (000)
Economic		
Income	8	$ 5,117,767
Rural	2	510,000
Per Capita	29	30,281,552
Median Family	5	3,830,000
Poverty/Low	36	60,849,386
Aggregate Personal	2	6,913,449
Farm	2	1,625,000
Rural Poverty	4	4,184,500
Labor (Household)		
Civilian Labor Force	2	9,972,600
Unemployment	14	10,159,114
Employment	9	426,375
Government		
Taxation	1	6,895,924
Expenditures	4	18,533,049
Employment	2	21,955
Salaries	1	550,000
Economic Sectors/ Employment		
Business Activity	5	100,233
Manufacturing	2	588,197
Retail Trade	1	580,597
Agricultural	3	1,706,349
Price Indexes		
Consumer	8	20,566,370
Producer	2	272,400
Education		
Enrollment	13	2,414,775
Graduates	2	640,750
Expenditures	7	4,364,067
Energy		
Energy	1	41,323
Heating & Cooling Degree Days	2	218,750
Conservation	1	47,000
Energy (continued)		
Fuel Cost	1	20,000
Residential Equipment	1	198,750
Environment/ Physical Conditions		
Land Area	21	8,787,586
Land Use	5	7,737,860
Environmental Conditions	11	3,539,117
Hazards and Disasters	4	66,292
Water Systems	1	26,400
Health		
Illness	3	186,800
Vital Statistics	3	823,400
Housing		
Number of Units	6	4,704,500
Condition	6	36,230,341
Vacancy	2	31,981,184
Population		
Total	64	72,716,612
By Age	28	4,930,255
By Race	3	6,957,086
Migration	6	139,325
Density	4	8,470,225
Urban	4	15,448,024
Rural	13	6,394,161
SMSA	3	436,499
Farm	6	2,001,701
Transportation		
Rail	2	7,687,707
Highways/ Roads	2	7,794,463
Aviation	1	629,140
Intra-City Transit	1	850,000
Administrative	27	25,594,850

DONALD W. RIEGLE, JR.
MICHIGAN

United States Senate
WASHINGTON, D.C. 20510

August 5, 1981

The Honorable David Durenberger
353 Russell Senate Office Building
Washington, DC

Dear Senator Durenberger:

As co-chairmen of the Northeast-Midwest Senate Coalition, we would like to request that the subcommittee include the enclosed summary of Cost Differences and Federal Formulas in the Intergovernmental Affairs subcommittee hearing report of May 13.

The hearing was an important step in the reassessment of the formulas that are used to allocate federal funds. Many of these formulas have been used for years and no longer accurately respond to need. The Subcommittee on Intergovernmental Affairs has focused on a fundamental and important aspect of the legislative process which currently is operating inefficiently and inequitably. We feel that the summary of the Northeast-Midwest Institute's report would be a valuable contribution to the hearing report.

We appreciate the opportunity to participate in the subcommittee's deliberations and thank you for your attention to our request.

Cordially,

Don Riegle
Donald Riegle
Co-Chairman

Arlen Specter
Arlen Specter
Co-Chairman

COST DIFFERENCES AND FEDERAL FORMULAS

In this period of budget austerity and limited government spending for social programs, Congressional attention is focusing on federal formulas used to allocate program funds. The ability of state and local governments to assume responsibilities being returned by the federal government depends on the resources at the disposal of those governments as well as the relative "need" of its resident population. Yet many allocation formulas currently use measures, such as per capita income, which are not responsive to changing economic factors affecting both resident "need" and the fiscal capacity to respond to that need.

By directing resources to areas and poeple that are most needy, the federal government can cut down on the funding level of a program while still providing a "safety-net" effect for distressed areas and people. However, as pointed out by Richard Nathan and Paul Dommel in "Issues and Techniques for Federal Grant-in-Aid Allocations to Distressed Cities," the trend over the last fifteen years has actually been to spread out the distribution of funds rather than the opposite - pursuing a targeted or "safety-net" approach. The combination of different program objectives incorporated into various allocation formulas has produced this spread-out pattern of distribution.

It is important during this time of reevaluation to not only consider the cost-effectiveness of better directed government funds, but also to evaluate the assumptions on which many federal formulas currently are based. This paper focuses on one such assumption - that cost of living or the cost of providing government services is the same everywhere in the United States, or that any differences that do exist are insignificant. Howevever there is a growing body of research which documents substantial differences in the cost of living and in the cost of providing government services.

Cost of Living Differences

The federal government has measured cost-of-living differences since the early 1900s. Since that time modifications of these measurements have served many administrative, legislative and analytical purposes. Modifications of these measurements have been used by the private sector to adjust salary levels for different parts of the country.

The Bureau of Labor Statistics currently calculates in its Family Budget Series what it costs a family and a retired couple to live in 24 metropolitan areas (and Anchorage, Alaska) and in four regional non-metropolitan areas. Data is published for three levels of living: "lower," "intermediate," and "higher." Within each region there are significant differences in what it costs to live between metropolitan and nonmetropolitan areas, but there are even more substantial differences between regions. The differences between the cost of living in Boston (117 percent of the national average) and the cost of living in Dallas, Texas (90 percent of the national average) is substantial - 27 percent. The variation between Boston and the nonmetropolitan areas in the South is 32 percent. Moreover, there is reason to believe that such differences are growing wider.

As shown in Table 1. the 1970 average U.S. per capita residential energy expenditure (not including transportation) was $97. In 1978 it was $237. In 1970 energy represented 2.5 percent of the average per capita income. In 1978 it represented 3.0 percent or a .5 percent increase. However, when the state with the highest average residential energy expenditure is compared to the state with the lowest average residential energy costs, striking differences were noted. Residential energy expenditures represented 3.4 percent of per capita income in 1970 in New Hampshire and grew to 4.5 percent by 1978. In Washington, the percentage actually declined from 2 percent to 1.6 percent due to the combined affect of a more rapid increase in per capita income and a smaller increase in energy expenditures.

In the seventies, state differences in average per capita income narrowed, continuing a trend started in the 1930s. While observers have pointed to these statistics as proving that the nation's personal income has been more evenly distributed, the figures indicate signs of economic distress for some states, which is masked by their relatively higher incomes. To the extent that growth in personal income in these states may signal economic patterns of distress. Income growth in the seventies averaged the lowest percentage growth in the Northeast followed by the Midwest. Income gains were the strongest in the South and in the West.

TABLE 1.

Average Per Capita Energy Costs*

	Average Per Capita Income	Average Per Capita Energy	Energy as % of Per Capita Income
United States			
1970	$3,893	$97	2.5%
1978	$7,810	$237	3.0%
New Hampshire			
1970	$3,720	$125	3.4%
1978	$7,277	$324	4.5%
Washington			
1970	$3,997	$79	2.0%
1978	$8,450	$134	1.6%

Moreover, state rates of growth in per capita income mask the relative income growth between prosperous communities, central cities, and rural areas. In a 1979 report on City Need and Community Development Funding, Bunce and Goldberg observed:

> When change in income is used, Northeast and North Central cities showed a slower relative growth during the period 1969 to 1974. As a percent of income, cities in the Northeast have exhibited the smallest rate of change (36 percent) and cities in the South, the largest rate of change (50 percent). In sum, larger Northern cities often have both a lower level and a lower growth of income (whether measured in percentage or net dollar terms) than their Southern counterparts.

Although there are no definitive answers to what causes geographical cost-of-living differentials, there have been a number of studies which have identified the following factors which appear to be important:

- Population Density. McMahon and Melton found that cost of living was generally higher in urban areas and that the increase in popula- was more significant in predicting cost differences than just population size.
- Housing Costs. Housing costs vary widely among areas within the United States. Housing costs are affected by climatic differences as well as imperfections in competition in both the building materials industry and the construction trades. In addition, housing costs reflect differences in interest costs, land values and property taxes.

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* Includes heating and cooling and electricity costs but not transportation.

- Energy Costs. As discussed above, residential energy costs vary widely among states. This has a particularly harsh impact on the poor who spend a disproportionate share of their income on energy. A 1977 report by the Massachusetts Institute for Technology for the Joint Economic Committee found that approximately 30 to 40 percent of a poor family's income is spent on energy compared to approximately 5 percent for families earning over $30,000.

Not only are cost-of-living differences substantial, there is reason to believe that they are increasing. At the same time, other economic factors over the last decade have affected the location of the poor. In contrast to the concentrations of poor in distressed central cities throughout the Northeast and Midwest, where employment opportunities are stagnant or declining, much of the poverty in the South has been in non-metropolitan areas. Income gains over the last decade were strongest in the South and in the smallest towns, the primary location of Southern poor. Income gains were the lowest in central cities in the Northeast and Midwest, where poverty is concentrated in central cities.

The picture that emerges is quite clear - not only do geographical cost differences exist, but central city poor face substantially higher living costs than rural poor regardless of region. Furthermore, rural poverty is concentrated most heavily in the South (where cost of living is the cheapest) and urban poverty is concentrated primarily in distressed central cities, particularly in the Northeast and Midwest where living costs are higher.

Equally significant - employment opportunities are growing at a slower rate in distressed central cities of the Northeast-Midwest (with declining opportunities in some areas) as is per capita income. In contrast, the 1970s saw a reduction in non-metropolitan poverty - particularly in the South where per capita income rose significantly - reducing the number of persons in poverty.

COST OF SERVICES DIFFERENCES

The geographical cost-of-living differences measured by BLS and by others suggest that cost variations are present and substantial. In contrast to measurement of these area living costs, the state-of-the-art in measuring area cost of government services differences is relatively undeveloped. However, while there is no comparable measure of area variations in the cost of providing government services, initial work in this area indicates the presence of substantial variations. Moreover, these variations generally parallel those documented by BLS's Family Budget Series. Such variations seem consistent given the high percentage of overall governmental expenditures for personnel costs (estimated at roughly 48 percent of government budgets) and capital costs which would reflect differences in cost of constructing and maintaining buildings, (roughly analogous to housing cost differentials for individuals), and other forms of public capital investments. Differences in personnel costs can be expected to reflect the cost-of-living differences among areas.

Just as energy costs for personal use vary among the states, so does the cost of energy used in the commercial sector (which includes government energy use). State commercial energy prices in 1978 varied from $3688 per billion BTUs in Delaware to $1701 in the state of Washington, a 117 percent difference.

Variations in government expenditures among jurisdictions are the result of differences in the type, amount, quality, and cost of the goods and services purchased by local government. The type and amount of services provided by local governments depend in part on characteristics of population, environmental conditions and settlement patterns. Cities may or may not need to provide snow removal services. The costs of heating and cooling public buildings vary depending on the climate. In part, the amount of police, fire protection and sanitation services provided may be attributed to differences in need.

The incidence of violent crime, fire, abandoned housing, litter, and infrastructure deterioration can create immediate pressure in declining and needy cities for fire, police and sanitation services. A study of the incidence of fire, for example, indicates that the number of fires per capita is roughly twice as high in older cities than in lower density, growing areas. Similarly, data indicate that violent crimes per capita are twice as high in "needy" cities than in "low need" cities, and four times as high as in their own suburbs. Urban communities often require more sophisticated and expensive sewage collection facilities to prevent contamination and ensure public health. Although it is relatively easy to cite examples, additional research is required before the relationship of these factors to the type and amount of services needed can be systematically analyzed and understood.

The Center for Governmental Research compiled a preliminary cost-of-services index modeled in theory on the BLS market basket approach to the measurement of cost of living differences (Grasberger and Moyer, 1978). The Center's index estimates variations in governmental purchasing power rather than the purchasing power of individuals. That is, local purchases of a fixed set of goods and services were held constant and priced out in different areas.

Recognizing the limitations of this preliminary methodology, the Center stressed that the indexes they developed were illustrative rather than definitive. The differences among states were found to be significant. Excluding Hawaii and Alaska, variations among states were as much as 33 percentage points -- 117 in Washington, D.C. and 84 in Mississippi. If Alaska were included, the discrepancy widens to 74 points in 1975. High costs for government services were found in New England, Mid-North, Mid-South, the Great Lakes and the Far West. The lowest cost-of-services were found in the Southeast followed by the Plains states, the Southwest, and Rocky Mountain areas.

PER CAPITA INCOME

By not adjusting for area cost differences in federal grants-in-aid programs the federal government perpetuates a bias against governments and individuals in high cost areas, which is substantial and pervasive. It promotes an inefficient and inequitable distribution of federal benefits and resources, hampering the federal government's ability to concentrate on areas of greatest need. It penalizes states and local governments in high cost areas that have committed themselves to the maintenance of minimal standards of living and of public services. By understanding need and overestimating the fiscal capacity of such areas to respond to resident need, it creates a double disparity in many programs.

Formulas designed to establish eligibility and/or allocate funds for various grant programs vary greatly from program to program. Some measure of income, however, is frequently used both for people-oriented programs (as a measure of personal need) and for local governments (as a proxy for fiscal capacity). However, both the measurement of need (for example, number of persons in poverty) and the measurement of fiscal capacity, for the most part, are unadjusted for area cost differences. By not adjusting for area cost differences, the use of poverty measurements underestimates the number of needy in expensive areas and overestimates the number in low cost areas. At the same time, many grant programs for individuals (such as Aid to Families with Dependent Children) and for governments use a measure of fiscal capacity or tax effort in an attempt to achieve an equalization effect. Often a simple proxy for a comprehensive measure of fiscal capacity is used, such as per capita income. "Tax effort" or "tax burden" is generally expressed as the ratio of tax revenues to fiscal capacity. Therefore, wherever personal income overstates fiscal capacity, it understates tax effort.

MEASUREMENT OF NEED

The use of an unadjusted poverty measure which is blind to cost-of-living differences underestimates the number of poor in high cost areas and overestimates the poor in low cost areas. For example, in a 1976 report criticizing the heavy weight assigned to the poverty measure, the General Accounting Office concluded: "cities with low cost-of-living have their poverty count overstated while cities with high cost-of-living have their costs understated. In terms of real income, the family in Austin, Texas, has about 20 percent more purchasing power per dollar than the family in New York" As a result, use of this measure in an allocation formula places areas with high living costs at a disadvantage and results in a systematic underestimation of their social and economic needs. The GAO study recommended that the poverty measure be indexed to account for regional variations in the cost-of-living thereby correcting the inherent bias of a national poverty figure. Schafer adjusted poverty estimates concluded that the Northeast-Midwest would show roughly 500,000 additional persons in poverty while the South and West would register a loss of 1,300,000 people at the poverty line. (The South would account for all but a small portion of the loss).

PER CAPITA INCOME AS A MEASURE OF FISCAL CAPACITY

The logic behind the use of per capita income as a measure of fiscal capacity is that high per capita income provides a greater tax base from which to generate revenues. However, the measure is biased against high cost areas where taxation does not take into account the relative level of income needed to maintain a given standard of living. By using unadjusted per capita income as a proxy for fiscal capacity, the fiscal capacity of high cost areas is overestimated.

The use of per capita income as a measure of tax capacity also ignores the problems of tax exporting. While all states export some taxes, the Advisory Commission on Intergovernmental Relations has found that, through cross exportations, the net exportation result is negligible, with the major and growing exception that energy rich states probably export a substantially greater share of taxes. This disparity is likely to increase rapidly over the next decade. Two separate estimates have been made of the total increase in state and local tax revenues as a result of oil price decontrol alone: the Congressional Budget Office estimated they would increase by $112 billion over the decade 1980-1990 and the Treasury Department estimated they would be $127.6 billion for 1979-1990. Furthermore, 90 percent of the revenues would flow to the eight oil rich states in the South and West (Texas, Alaska, Louisiana, California, Oklahoma, Wyoming, New Mexico and Kansas). However, these estimated may be too low. Information recently available from Alaska, which has developed projected oil severance and royalty revenues, shows projected revenues of approximately $200 billion for the next 20 years.

The widespread use of measures such as unadjusted per capita income perpetuates a federal bias against areas of the country with higher costs. The use of such measures in federal allocations formulas prevents more effective distributions of funds to the greatest need. The use of per capita income figures in the Medicaid funding formula (a variation of this "Hill-Burton" formula is used for the Aid to Families with Dependent Children and the Elementary and Secondary Education Assistance program) allocated funds based on the inverse of per capita income figures.

Together these formulas determine the distribution of billions of dollars in federal assistance. Yet the formulas used do not accurately distribute the funds according to the greatest need. They are slow to respond to changes in state economies; they overestimate fiscal capacity by squaring differences in state per capita income, and they tend to reimburse the low-cost states at the highest rates.

TESTIMONY BY SENATOR DONALD W. RIEGLE, JR. ON BEHALF OF THE NORTHEAST-MIDWEST SENATE COALITION

BEFORE THE SENATE SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS

MAY 13, 1981

I am here today as Co-Chairman of the Northeast-Midwest Senate Coalition to present data prepared by the Northeast-Midwest Institute regarding inequities in federal program allocation formulas.

As we try to check the growth in federal spending, I believe that a review of these formulas is in order and I hope that present inequities in how funding is allocated will be corrected.

Following is the statement prepared for the Senate Coalition by the Northeast-Midwest Institute staff:

Many of the federal allocation formulas used to distribute funds to state and local areas are not well targeted to need. In many cases these formulas do not base allocation of funds on factors that accurately represent the fiscal capacity or the need of the areas.

Determining the rates at which states will be reimbursed for Medicaid expenses presents a good example of present inequities in federal formulas. The Medicaid program assists states in the provision of medical care to low-income residents. The President has proposed to increase federal expenditures for Medicaid by only 5 percent in 1982, after which federal spending would rise with the rate of inflation as measured by the gross national product deflator. Under the President's proposal, federal expenditures would be allocated among states according to the present formula, which does not adequately consider need.

The federal government provides a portion of the total state funding, based on the following formula:

$$\text{States Share} = \frac{.45 \times (\text{state per capita income})^2}{(\text{national per capita income})^2}$$

The law requires the federal government to pay at least 50 percent but no more than 83 percent of total state expenditures.

The formula used to determine the state's share of expenditures uses per capita income as a proxy for fiscal capacity, which systematically and unfairly biases the formula against high-cost states for several reasons:

o Per capita income figures are not an accurate measure of fiscal capacity. The ability of state and local governments to assume responsibilities being "shed" by the federal government depends upon the amount of resources at the disposal of those governments. The operating balances of general funds provide one rough measure of the ability of state governments to immediately assume new responsibilities. A National Governors Association report has projected that the states of the South and West on the average have budget surpluses of 10 percent of their 1980 expenditures. The states of the Northeast and Midwest were projected to have average budget surpluses of 5.6 percent of 1980 expenditures. Budget surpluses of this size are necessary for any prudent state to avoid a deficit and deficits are constitutionally prohibited in most states. For 1981 the average state budget surplus will be well below four percent, down from an average of nine percent in 1980. Although state estimates have not yet been released, according to the National Governor's Association, the states which are heavily hit are those in the Northern tier. Projections for 1982 show that average balances may fall to two percent. However, those averages mask a disparity between the few healthy states and the many that are suffering. In 1980, at least 78 percent of the dollar value of budget surpluses occurs in the states of the South and West, with a few mineral-producing states possessing more than 50 percent of the total national budget surplus. If the State of Texas' payments from energy revenues into the University's enormous endowment were counted as a "surplus," this relationship would be far stronger.

The present level of taxation imposed by a state or locality reflects the jurisdiction's capacity to respond to reductions in federal assistance. The relationship of a state's or locality's tax effort to its tax capacity suggests its ability to raise new revenues. In general, the higher a jurisdiction's current tax effort, the less able it will be to raise additional revenues to assume further responsibilities, although this is not true in the case of states with high severance taxes and royalties. The Advisory Commission on Intergovernmental Relations has monitored these relationships over time, and its analysis demonstrates that states in the Northeast-Midwest region generally have higher tax efforts than states in other regions, and suggests that significant additional tax capacity remains in Southern and some Western states.

o Per capita income figures are "nominal" income figures which do not reflect "real" income or differences in the cost of maintaining a given standard of living. Significant cost-of-living differences have been measured both by the federal government and the private sector.

o The allocation formula does not consider the relative costs of providing the same Medicaid services in different places. For example, the national daily hospital cost in 1979 was $276; yet costs per state varied from an index of 61 in Mississippi, to 122 in Michigan, and 146 in Alaska where the national average price equals 100.

o When per capita income is squared in the Medicaid allocation formula, relatively small differences in state per capita income result in large differences in the federal share of funding. For example, if the state per capita income was $2000 and the national income was $3000, the state's share would be 20 percent. However, if the state's per capita income was $2,500, the state's share would rise to 32.5 percent. In this case, the state's per capita income is only 25 percent higher, although the state's share increases 62.4 percent.

o The current formula for calculating a state's share is even more inequitable to those large industrial states like Michigan which are subject to cyclical periods of economic recession. During these periods of recession, state revenues decline and demand for services (such as unemployment compensation, general relief, medical assistance, and Aid to Families with Dependent Children (AFDC) increases. Yet, the base period for determining per capita income is the three years prior to the year the rate is revised and remains in effect for the next two fiscal years. Use of a three year period spreads the effect of a recession over a time frame that is slow to respond to the more immediate impact of a recession on a state's per capita income. The rate, because of the time lag, doesn't follow closely the fluctuations of the economy.

Other formulas have similar problems. The Medicaid formula is only one variation of the old "Hill-Burton formula" which allocates funds based on the inverse of per capita income figures. An identical formula is used for the Aid to Families with Dependent Children program. The Elementary and Secondary Education Assistance program (Title 1.) and the Vocational Education and Rehabilitation programs are also based on variations of this formula.

Together these formulas determine the distribution of billions of dollars in federal assistance. Yet the formulas used do not accurately distribute the funds according to the greatest need. They are slow to respond to changes in state economies; they overestimate fiscal capacity by squaring differences in state per capita income, and they tend to reimburse the low-cost states at the highest rates.

In the past, when Congress recognized that a formula failed to allocate funds according to established needs; it moved to correct the formula or to offer an alternative. The Community development Block Grant formula, for example, distributes funds by a dual formula method, based on factors which uniformly and objectively determine community development need. The original formula, established in 1974, allocates funds based on a community's total population (weighted 25 percent), extent of poverty (50 percent), and number of overcrowded housing units (25 percent).

In a 1976 report criticizing the heavy weight assigned to the poverty measure, the General Accounting Office concluded: "cities with low cost-of-living have their poverty count overstated while cities with high cost-of-living have their counts understated. In terms of real income, the family in Austin, Texas, has about 20 percent more purchasing power per dollar than the family in New York." As a result, use of this measure in an allocation formula places areas with high living costs at a disadvantage and results in a systematic underestimation of their social and economic needs. The GAO study recommended that the poverty measure be indexed to account for regional variations in the cost of living thereby correcting the inherent bias of the original CDBG formula. The Congressional Budget office reached similar conclusions in one of its reports. It is partly for this reason that large needy cities in all regions of the nation, including the South, rely on the second formula for CDBG allocations.

In response to criticism of the original formula's failure to allocate community development funds to communities in economic and physical decline, Congress approved a second formula alternative during reauthorization in 1977. The second formula alternative incorporates factors measuring a community's pre-1939 housing stock (weighted 50 percent), population in poverty (30 percent), and relative population growth lag (20 percent). This 1977 action signaled federal recognition of formula inequities and the necessity of constructing funding formulas that respond to different needs.

Since the Hill-Burton formula was first adopted in the late 1940's for the hospital construction assistance program, the states' relative economic conditions have changed as well as the recognition of economic distress signals of our nations communities. The President's Urban Policy Report of 1980 pointed out the importance of using a number of indicators in measuring economic distress:

- low growth rates in population and jobs;
- high unemployment;
- low rates of capital and business investment; and
- growth lag in per capita income.

The OMB report "Regional Analysis of the President's Economic Recovery Program," confirmed the prevalence of economic distress signals throughout the Northeast-Midwest region and projected the continuence of these patterns through to 1986.

PROJECTED GROWTH, 1980-1986
(Calendar years)

	Population	Employment	Average wages and salaries
U.S. total	6.7	12.6	59.8
Northeast	*	5.6	63.2
Midwest	2.7	10.7	60.6
South	9.7	15.8	59.4
West	14.7	18.5	55.3

*Less than .05 percent.

With the present knowledge about the interaction of economic conditions and fiscal strains, Congress must act to change formulas that are contributing to the weakened regional economies of distressed areas. by perpetuating formula funding inequities, Congress could inadvertantly bring distressed communities throughout the nation to their knees.

The state of Michigan with soaring unemployment, increased demand for social services, and budget reductions in a host of federal programs, cannot bear up under the continued inequities of present federal formulas.

The action taken on May 5, 1981 by the Finance Committee on the Medicaid program is unconscionable in the light of these economic disparities. By adopting an amendment to lower the floor in the federal share from 50 to 40 percent, the Committee chose to slash deeper federal funds for states like Michigan and Illinois, New Jersey and Connecticut which are already unfairly burdened. It would be far more equitable to drop the squaring mechanism and lower the federal ceiling thereby narrowing the gap in the percentage of funds supplied by the federal government for the program and/or index the distribution of funds by average hospital costs. To allow the federal share to vary from 40 percent to 83 percent, with the lowest percentage going to states with high costs and the least additional tax capacity cannot be in the best interests of this nation.

Congress corrected problems in the CDBG formula, as well as in the Low Income Energy Assistance formula, after understanding the inequities of a formula which did not respond to recognized needs. Given the magnitude of proposed cuts in the human resources areas, the differences in states' capacity to assume increased responsibility for these programs, and formulas which award the lowest federal share to the highest cost states: formula alternatives which recognize these problems must be established.

The administration in pledging its commitment to the continuation of the Labor Surplus Area Procurement Program in the Department of Defense, has demonstrated its commitment to targeting scarce resources to areas of greatest need. We must correct other formula inequities so that all states share equally in the sacrifices required by these proposed budget cuts.

STATEMENT

OF

HON. RICHARD RILEY,

GOVERNOR

SOUTH CAROLINA

FOR

INTERGOVERNMENTAL RELATIONS SUBCOMMITTEE

GOVERNMENTAL AFFAIRS COMMITTEE

UNITED STATES SENATE

MAY 13, 1981 HEARING

GENERAL TOPIC OF FISCAL DISPARITIES
WITH SPECIFIC FOCUS ON FEDERAL ALLOCATION FORMULAE

The stated purpose of this hearing is to determine the extent to which fiscal disparities are created and/or exacerbated by the myriad of allocation formulae used to distribute federal dollars to the states and localities.

The Southern Growth Policies Board has identified 228 federal programs distributing 340 billion federal dollars on a formula basis. 137 of these federal programs, worth a total of 178 billion dollars distribute monies on the basis of population, poverty, and income. 91 additional federal programs, bearing 162 billion dollars, allocate dollars on the basis of a variety of factors emphasizing such matters as housing conditions and vacancies, unemployment, land area and use, air and water quality, government expenditures, the consumer price index, and miles or use of rail, highways and waterways.

With this level of funding at stake and particularly in a budgetary climate which inevitably triggers a scramble to redivide declining resources, this hearing takes on a special significance. Geographic equity must be the principle governing the expenditure of these massive sums of public money, but one state or region's fairness is another's inequality. Translating general goals into specific allocation formulae is a complex job.

The task was easier during the 1960's and the first one-half of the 70's because there was a general concensus on goals and objectives: most distributions were keyed directly to the elimination of poverty. Accordingly the formulae incorporated data indicating the level of poverty.

By the end of the 1970's the goals were in flux, the formulae multiplied and became overburdened with a variety of criteria, and neither social scientists nor the public could fathom any relationship between the intent of the legislation and the distribution pattern of the funds.

In the past this presented few problems, since the Congress defined and planned programs and then provided levels of funds to meet those needs. Last week's vote in the House symbolizes the reversal of this process. Now we decide upon the total amount available to be spent before us and, then, given financial restrictions, must choose whom is to be served. Goals will be defined by what we were able to accomplish after the fact, not in advance.

There is a growing concern among governors and Members of Congress about the regional impact of the Administration's proposed budget cuts. Study after study on the impact of the President's proposals is being produced. The conclusions of each of them seem to depend upon the particular political or regional bias of the institutions or individuals producing the sutdies:

- The Northeast-Midwest Congressional Coalition voices its opinion through numerous press conferences and news releases that the proposed budget cuts and tax reductions will place a disproportionate burden on their region;
- The Office of Management and Budget projects a neutral regional impact for the budget cuts and a slightly lower benefit from tax cuts in the South where incomes are lower;
- The Congressional Budget Office analysis of the cumulative effect of planned reductions, totalling over $5 billion, concludes that families in the South, especially the very poorest families, would be affected most by the cuts;
- The University of Michigan's Center for Political Studies' Institute for Social Research indicated that the budget cuts will have the largest impact on the Northeast-Midwest region;
- The Southern Growth Policies Board carefully analyzed the University of Michigan data, and shows that the South will actually receive the greatest proportion of the budget cuts by computing the impact on a per capita basis instead of lump sum totals.

Not one of these analyses performed by regionally neutral agencies supports the Northeast-Midwest Congressional Coalition contention that older, industrial areas suffer most from the Administration's economic package.

I am in complete agreement with President Reagan's stated intention to maintain a safety net for the truly needy and with the Administration's block grant proposals, which would consolidate as many as 36 categorical programs into one block grant to the states. Defining the truly needy to be served by these programs is, however, not as simple as many of us wish it were. That is the problem.

Congress has to realize that the definition of need becomes particularly crucial when program distribution systems are altered. The complexities of formula-based allocation systems make defining need and ensuring that funds are targeted to meet program goals extremely difficult. A block grant allocation is a closed system and a zero-sum game. A small change in one factor sends ripples through the whole system; a gain for one recipient will cause an off-setting loss for another.

Because national goals for federal dollars are in a state of flux, I am concerned that the neediest of the needy, regardless of where they reside in the United States, will not be served adequately. I am concerned about increased reliance upon certain national allocation formulae variables for distributing federal dollars that focus on a state's relatively high-income population. To the extent that these formula variables shortchange areas populated by the truly needy in favor of locations with less deserving populations, the funds available for those who deserve to receive them become more limited than necessary. Examples of often misused formulae variables are cost of living adjustments (the Family Budget Series, Bureau of Labor Statistics), those based on representative tax systems, pre-1940 housing counts, and the most recent and ludicrous, the weather or heating degree days squared.

Only when national allocation formulas are based on poverty, income, and population can the neediest of the needy be adequately served.

The establishment of the national poverty index has been the subject of government-wide debate for two decades. The poverty index now used by the Census Bureau and established by the Office of Management and Budget was first articualted by Mollie Orshansky in an article, dated January 1965, in the Social Security Bulletin, entitled "Counting the Poor: Another Look at the Poverty Profile." Ms. Orshansky's concept of poverty is based on a budget which can sustain an adequate nutritional level. Instead of a single income cutoff or measure which counts a constant proportion of the population, she used a sliding scale of income requirements for different family sizes and compositions.

Many federal programs are designed to help the poor (needy, low-income, disadvantaged) and use a poverty measure or income eligibility standard for administrative purposes. Although the Orshansky measure, which was orginally developed as a statistical measure has been widely adopted, it is not the only administrative measure of poverty used. Moreover, the official measure is usually modified to some degree and frequently is used in conjunction with still other critiera. Often programs use different definitions of income, increasing diversity still further. Such variations in Federal administrative practice occurs because of the broad spectrum of objectives covered by these programs.

The use of a cost of living variable Family Budget Series, (Bureau of Labor Statistics Lower Living Standard) in the national allocation formula for the Low Income Energy Act (LIEA) is one of the more difficult Congressional actions to understand.

On an interstate basis, the BLS factor in this authorizing legislation shifts funds to states with higher incomes. On an intrastate basis, this allows states like Massachusetts to subsidize individuals with gross incomes at 180% of poverty (annual income levels of $16-17,000), and to add approximately 200,000 eligibles to their roles. On the other hand, states like Mississippi, where the per capita income for 1979 is $6,167, have had to limit distributions to individuals at 60 to 80 percent of the poverty level because their state allocations were $12 million compared to $79 million for Massachusetts. The Low Income Energy Assistance Program reached the zenith of regional chauvinism by using as a need indicator heating degree days squared. The federal government simply should not define need on the basis of the weather.

The Southern States Energy Board has developed a formula for energy assistance which takes into consideration the number of poverty stricken persons in a state, the amount of monies expended by low income households on energy, and the amount of federal monies available to expend on this program. This would be straightforward and, more important, keyed directly to the intent of the legislation.

The Bureau of Labor Statistics itself, in its Handbook of Methods, warns data users against relying too heavily upon the Family Budget Series because it is:

- Based on a 1960-61 consumer survey;
- Designed for making cost comparisons over time rather than among different localities. The goods included in the sample budgets are not the same for different areas; the family budgets more low-cost items in low-income areas;

- Limited because of incomplete geographical coverage. The Department of Agriculture decided not to use low-income family budget food costs for its WIC food supplement program because "there is not sufficient data to consider all areas equitably."

- Disparities within geographic areas exceed interregional differences. The Agriculture Department found an 11.2 percent difference in low-income budgets between the lowest cost region (South) and the highest (Northeast). But this 11.2 percent differential between parts of the country was exceeded by the 17 percent difference between the highest and the lowest cost of a low-income family budget for places within the South. Even within individual states, large differences exist, especially between metropolitan and non-metropolitan areas.

Using the Family Series to adjust incomes for allocation formulas would create more inequities than it would cure. A report on the use of these statistics for adjusting poverty levels was commissioned as part of a Congressionally mandated study by the Department of Health, Education, and Welfare, of the Measurement of Poverty. The author, an employee of the Bureau of Labor Statistics which produces the Family Budget Series data, concluded:

> What implications can be drawn from this discussion regarding the use of the interarea indexes computed in the family budgets program to adjust a poverty threshold for geographic differences in cost of living?...possible differential allocations of funds among areas based on this adjusted threshold may not really be accounting for cost of living differences. Poor people in the South may receive less money than someone in the Northeast not because it costs an individual less to live in the South, but rather because people in the south cannot afford to buy the same products as were bought in the Northeast. [3]

Another suggested approach to cost of living adjustments is to use local income distribution rather than national figures to determine poverty thresholds and need for program assistance. But using a local figure such as median income or a per cent of median income would be equitable only if all places were equally well-off or had an equal proportion of poor people.

Any one who has travelled very far from home knows that to be false. Brownsville, Texas is as far below Boston, Massachusetts or Minnesota in terms of economic well-being as it is geographically.

The cost of living has been rising more rapidly in low-income areas and more slowly in high-income areas. As regional incomes move closer together, the regional differences in costs of living are shrinking. As the regional economies become more integrated into the national economy, these differences will become less and less. Between 1972 and 1978, the Consumer Price Index increased 66.4% in the South, almost 10 points higher than the increase in the Northeast. Regional cost of living differences are likely to become insignificant before anyone has devised a good way to measure tnem. Right now the only certain effect of cost of living adjustments is a shift of dollars away from recipients in the South, the region with the lowest-income population.

Another formula variable which has been suggested for use as an indicator of fiscal capacity in various allocation formulas is the representative tax system. To develop the system, an assumption was made that higher tax efforts in some states were replicable in all states, and, therefore, that those states which had lower tax rates were less deserving of federal assistance. Such schemes are highly unreliable. They neglect distinctions between states which impact their taxing capacity and also assume higher tax levels are advisable and beneficial. Clearly the public does not subscribe to this view.

The potential nexus between high tax rates and slower economic growth should signal a warning against forcing states to raise their tax rates to secure federal funds. States which have chosen to follow more fiscally sound courses and restrain their spending would be penalized by the adoption of this representative tax system. On the other hand, rewards are given to those who will tax their people the most.

Another example of inequities in allocation formulae are variables which incorporate a heavy regional bias rather than true indicators of need. A prime illustration of this would be the dual allocation formula in the Community Development Block Grant (CDBG) program and the Urban Development Action Grants. The dual formula gives inordinate weight to the pre-1940 age of housing variable which is reinforced by the population growth lag variable. The presence of these two variables in the same formula insures that a disproportionate amount of CDBG funds go to the Northeast and Midwest at the expense of minority groups, the truly needy and many cities of other regions with an enormous amount of substandard housing. The inadequacy of the present formulae to target CDBG funds to low income and minority areas was demonstrated in a recent General Accounting Office study, which was requested by Sen Proxmire of Wisconsin.

Single-minded regionalism must not obscure the important issue of targeting need as federal assistance programs change allocations systems. Instead of fighting for pices of a shrinking pie, federal and state officials must work together to determine how to best distribute available federal dollars to meet the nations's needs and what state and local governments can do for themselves with their own resources.

Cutbacks pose political difficulties for all of us. We are receiving letters and visits from our constituents, most of whom want cutbacks to be in programs that do not affect them. This is understandable, if not very constructive. Similarly, elected officials try to shift the impact of budget cuts to somone else's constituents.

The Administration, the National Governors Association, and the Advisory Commission on Intergovernmental Relations (ACIR) have all been involved in discussions on revitalizing the federal system and in "sorting out" responsible levels of government for the provision of various services. The President's position is that the states should have the dominant role in targeting eligible populations. We agree. Nonetheless, the Congress still has an important role to play in identifying those deserving of government assistance. Federal and state governments should share in determining what constitutes need in the United States and directing programs and, therefore, federal dollars to meet that need. Determining who is and who is not "truly needy" should be a shared governmental function with the Congress, through fair and equitable national allocation formulas, giving the states maximum flexibility in program design. Devising formulas that ignore any targeting, thereby permitting some states to bestow scarce federal resources upon households with five-figure incomes, is not the answer. That is federal abdication, not federal responsibility.

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STATE ENERGY TAXATION: PRODUCER STATE ISSUES

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A. INTRODUCTION

There is little doubt that the prices of domestic energy resources will rise considerably over the next decade. Crude oil and natural gas will be totally deregulated by 1985, and growing use of coal as a boiler fuel will put upward pressures on coal prices.

As energy prices rise, ad valorem levies on production--such as most state severance taxes--will generate substantially higher revenues. For example, a recent Congressional Budget Office study, using a petroleum industry model, estimates that total state and local revenue to oil producing states will increase $112 billion between 1980 and 1990, about $10.8 billion per year, as a result of decontrol.[1] Another CBO study projects that the 10 major coal producing states will realize gains of over $1.3 billion annually by 1990 from severance and production taxes, assuming no change in existing tax rates.[2]

These revenue gains have been dubbed "unfair windfalls" by the Northeast-Midwest Institute and other interest groups representing non-producing states. "Severance tax warfare," it is claimed, will accelerate the movement of people, jobs, and wealth from the Northeast to the Sunbelt as energy-rich states will be able to hold down, or reduce, sales, income, property, and other taxes on their residents.[3]

B. THE RATIONALE FOR SEVERANCE TAXES

Severance taxes have been part of the state fiscal picture since 1846 when the state of Michigan first imposed a tax on the extraction of iron ore. Currently, 33 states impose severance taxes on mineral and timber production. In fiscal 1979, the combined yields for all states were $2.9 billion, or 2.3 percent of all state government tax revenue.[4]

Traditionally, severance taxes have been justified on the grounds of real resource depletion--i.e., once severed from the soil, the resource no longer constitutes part of the state's economic base. In practice, the severance tax is an "excise" levied on producers for the privilege of extracting "non-renewable" resources such as coal, oil, gas, iron ore, and sulfur. (It is arguable whether timber is renewable or not.)

During the years ahead, an even stronger case can be made for levying severance taxes. Development of new energy resources, especially in the more rural western states, will place serious strains on state and local budgets. People and businesses flocking to new energy-related communities will need expanded services such as education, police and fire protection, and health care. New roads, water systems, and sewerage will also be required. These front-end costs cannot be easily underwritten by the existing tax base, and concern has been expressed about imposing significantly higher tax burdens on the permanent residents of energy-producing areas who are frequently farmers and ranchers.

Severance taxes are both an efficient and equitable means of financing the public service costs associated with energy development. Administration of the tax is quite simple since the state revenue department only needs to know the quantity produced and the transaction price (in the case of ad valorem severance taxes). On equity grounds the tax also holds up since it spreads part of the development costs among final users of energy resources in the form of higher product prices.

While the popular press has played up the alleged tax bonanza to energy-producing states from higher severance tax yields, more careful analysis suggests that projected incremental receipts will, on balance, just about cover projected increases in public service costs, at least for coal and synthetic fuel plant states. For example, a recent CBO study looked at the additional costs and revenues associated with coal and synthetic fuel development in the ten major coal-producing states: Alabama, Colorado, Illinois, Montana, New Mexico, North Dakota, Texas, Utah, West Virginia, and Wyoming.[5] Production was assumed to increase 9 percent annually through 1985 and 7 percent annually between 1985 and 1990. Incremental public service costs were estimated for water, sewage, waste, police, fire, recreation, education, roads, land acquisition, and general government administration. According to CBO, five states--Alabama, Illinois, Texas, Utah and West Virginia--are likely to experience costs in excess of revenue if existing tax rates are maintained and if coal production increases to assumed levels. The remaining five states are likely to experience revenue surpluses. It should be noted that CBO estimated only the direct costs associated with energy development. Social costs, such as environmental degradation, congestion, higher crime rates, etc., were excluded from the calculations.

Finally, the imposition of severance taxes can be justified on the grounds of states' rights since all tax powers not delegated to the federal government devolve to the states. In this regard, any federal attempts to limit or preempt state severance taxes would pose serious constitutional questions. The Northeast-Midwest Institute argues that energy resources belong to the nation as a whole, not the producing states, and that the federal government thereby has the right to eliminate individual state severance taxes in favor of a federal system that would share revenues among all 50 states.[6] Carried to its logical conclusion, this line of reasoning implies that all natural resources belong to the nation as a whole and that any state may lay claim to the resources of another. For example, while Texas may be long on oil it is short on water. Does water in Wisconsin inherently belong as much to Texas as to Wisconsin itself? Does the federal government have the right to redistribute water from Wisconsin to other states on the basis of need? If so, a total restructuring of intergovernmental relations, accompanied by a slew of constitutional amendments, will probably be required.

C. WHY SEVERANCE TAXES HAVE EMERGED AS A POLITICAL ISSUE

Energy severance taxes have been condemned by northern politicians and consumers not only because of the alleged windfalls to the producing states but because of the exportability of the taxes. The fact that energy consumers in New York and Massachusetts are helping to pay the taxes in Wyoming or Louisiana is somehow deemed "unfair." In practice, of course, all states attempt to export some of their taxes. Just as Texas' severance taxes are passed on to out-of-staters, so are taxes paid by automobile manufacturers to the city of Detroit passed on to those who buy cars and trucks in Dallas. Likewise, consumers of steel are indirectly paying taxes to Pittsburgh, and every transaction on the New York Stock Exchange is subject to a state-imposed transfer tax regardless of the stockholder's state of residence. Florida "exports" its tourist taxes and Nevada "exports" its gambling taxes.

Another new objection to severance taxes is that they place excessive burdens on interstate commerce. In this regard, the U.S. Supreme Court recently agreed to hear an appeal by Commonwealth Edison Company and 10 other utilities claiming that Montana's 30 percent levy on coal interferes with interstate commerce in violation of the Constitution.[7] But a close look at the data does not support claims of excessive burdens to final users.

According to the North Dakota Tax Department, severance taxes on coal amount to less than 2 percent of consumer electric bills.[8] At current prices for coal, Wyoming's 17 percent severance tax is estimated to add only $6.00 per year to the bill of a consumer using 7,000 kwh annually. In fact, local sales taxes on electricity are typically more burdensome on consumers than severance taxes. For example, one ton of lignite coal would produce about $65 worth of electricity if it were sold in Detroit. Michigan, with a 4 percent sales tax, collects $2.60 from the consumer who buys that electricity. In contrast, North Dakota would receive only 89 cents in severance tax and Montana would receive $1.60.

The Northeast-Midwest Institute and other northern interest groups have argued that higher severance tax collections will enable energy states to keep other taxes low and thereby enhance their ability to attract new industry. Industrial growth in the South and West has been occurring for several decades as the result of national development trends and market forces, and the presence or absence of severance taxes has been a negligible factor in this growth. As discussed earlier, higher severance tax collections in most states will be allocated to cover the direct and indirect costs associated with energy development. Furthermore, studies conducted by the Advisory Commission on Intergovernmental Relations and other researchers over the past two decades have uncovered no direct link between the state/local fiscal structure and industrial location. Claims that severance tax "windfalls" will provide the catalyst for even greater industry and people migration are grossly overstated.

Concern has also been voiced that higher severance tax collections by energy-producing states will seriously distort the intergovernmental fiscal system. Several intergovernmental grants include a tax effort factor in the allocation formula, and growing severance tax yields will allegedly give rise to a false measure of actual tax effort since a portion of the tax is exported. There are two basic errors to this claim. In the first place, the tax effort measure in federal formulas is always expressed relative to fiscal capacity, and capacity is usually defined as state personal income. As energy development proceeds, personal income in those states will rise considerably. This growth in the "denominator" of the effort factor will more than offset the growth of severance tax collections in the "numerator;" thus, no appreciable change should be recorded in measured tax effort. Secondly, if energy-producing states use higher severance tax collections to reduce or eliminate other personal and business taxes, measured tax effort relative to rising fiscal capacity would drop and those states would receive less, rather than more, federal dollars.

It is curious that the ongoing debate over the severance tax issue has included little reference to the recently enacted windfall profits tax, which is not a profits tax at all but rather a federal excise tax on energy production. For example, the Texas Energy and Natural Resources Advisory Council has estimated that the federal government will collect approximately $13 billion from Texas oil producers during 1980-81 under the windfall profits tax. In contrast, Texas will receive only about $1 billion in oil severance taxes.

Furthermore, the northeastern and midwestern regions of the nation will receive a substantial share of the proceeds from the windfall profits tax. Revenues have been earmarked for mass transit, low income energy assistance, and energy conservation programs that primarily benefit northern states and cities. At the same time, the Powerplant and Industrial Fuel Use Act of 1978 (PIFUA) will require massive outlays by southern and western utility companies to convert from natural gas to coal as a boiler fuel. The costs of conversion have been estimated at $13 billion, and the southern states, with one-third of the nation's population, will bear 89 percent of the burden.[9] While the South is incurring enormous outlays to convert from gas to coal, Congress is likely to provide direct subsidies to northern utilities to help underwrite the costs of converting from oil to coal.

D. DEFUSING THE SEVERANCE TAX ISSUE

The Northeast-Midwest Institute has proposed several options for dealing with the severance tax "problem." These include (a) outright limitations on the dollar value or rate of severance taxes and (b) the creation of a comprehensive federal severance tax in lieu of individual state taxes.[10] Several bills were introduced during the 96th Congress that would have limited the ability of states to levy taxes on energy production,[11] and similar legislation will likely reappear during the new Congress.

As mentioned earlier, the whole question of federal limitations or pre-emption poses some serious constitutional considerations, and any legislative initiatives of this nature would surely be challenged in the courts. Such clearly discriminatory public policy would also fan the fires of economic sectionalism, driving a political wedge between the energy haves and the energy have-nots. Isn't there a common political ground where the severance tax issue could be neutralized?

Adoption of a rational and coherent national energy policy, accompanied by more sensible environmental regulations, would go a long way toward defusing the severance tax issue. Current energy and environmental policies are working at cross purposes, and higher severance tax rates--especially in the western coal states--are a predictable outcome.

For example, some laws, such as the Powerplant and Industrial Fuel Use Act, mandate the use of specific fuels for specific purposes. In the case of PIFUA, only coal may be used as a boiler fuel in the future and existing gas-fired capacity must be converted by 1990. No interfuel substitution is permitted, even though for two years we have been adding to gas reserves at a rate faster than current consumption. While coal conversion is being mandated by energy policies, environmental regulations are putting a premium on low-sulfur, western coal. Because Montana and Wyoming account for more than two-thirds of the nation's low-sulfur coal reserves, a large degree of monopoly power is conferred upon those two states. Facing a relatively inelastic demand curve for their prime natural resource, Montana and Wyoming are behaving in a completely rational manner by boosting taxes on coal production. In a similar vein, all environmental and other regulatory constraints on the development of nuclearenergy confer some degree of monopoly power to fossil fuel producers.

The "solution" to the severance tax problem is to reduce the monopoly power of low-sulfur coal states and fossil fuel producers generally. Required are the complete and rapid decontrol of all energy prices, recision of federal laws and mandates pertaining to fuel use, the revival of our nuclear power program, and a modest relaxation of air quality standards so that eastern coal and lignite can be used more readily as boiler fuels. Such a program would ensure that all fuels were priced on a BTU equivalency basis, and no one state would be able to levy excessive production taxes for fear of losing business to other states and other fuels.

FOOTNOTES

[1] Congressional Budget Office, *The Windfall Profits Tax: A Comparative Analysis of Two Bills*, Staff Working Paper (Washington, D.C.: U.S. Government Printing Office), November 1979, p. 22.

[2] Congressional Budget Office, *Energy Development, Local Growth, and the Federal Role*, Staff Working Paper (Washington, D.C.: U.S. Government Printing Office), June 1980, p. xii.

[3] See Northeast-Midwest Institute, *The Effects of Rising State Severance Tax Revenues: 1980-1990*, Regional Energy Impact Brief No. 10 (Washington, D.C.: Northeast-Midwest Institute), February 1980.

[4] U.S. Bureau of the Census, *State Government Tax Collections in 1979*, GF79, No. 1 (Washington, D.C.: U.S. Government Printing Office), January 1980, p. 7.

[5] Congressional Budget Office, *Energy Development...*, pp. 36-45.

[6] Northeast-Midwest Institute, *op. cit.*, pp. 11-12.

[7] *Wall St. Journal*, December 9, 1980.

[8] Byron L. Dorgan, State Tax Commissioner, Letter to the Editor, *New York Times*, May 13, 1980.

[9] Southern States Energy Board, *Annual Report 1980* (Atlanta: Southern States Energy Board, 1980).

[10] Northeast-Midwest Institute, *op. cit*, pp. 11-12.

[11] e.g., H.R. 6625, 6654 and S. 2695.

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Characteristics of Formulas and Data Used in the Allocation of Federal Funds

MARÍA ELENA GONZÁLEZ

The formulas and data used for 13 federal programs that allocate funds to state and local areas are described. Suggestions for types of formulas and data appropriate for allocation of funds are made. Some recommendations in the *Report on Statistics for Allocation of Funds* published by the Office of Federal Statistical Policy and Standards are discussed. The possible effects of the formulas and data used in the allocation of funds for federal programs are examined in the light of the recommendations given in the report.

KEY WORDS: Allocation of funds; Small area data; Formula characteristics.

1. INTRODUCTION

Billions of dollars in federal funds are allocated to state and local governments, based on formulas specified in legislation. The executive departments are responsible for determining the amount of federal funds that each state and local government is entitled to receive. These funds constitute an important portion of state and local government budgets. Keyfitz (1979) said that "for *allocation* no uncertainty is permissible; seats in the House of Representatives and dollars of revenue sharing have to be distributed to the last unit." Determining the basis for distributing allocated funds, based on specified formulas and data selected, is of crucial concern to the Congress, as well as to federal, state and local governments.

Table 1 shows that for the 13 major formula grants shown, $50 billion were obligated during fiscal year (FY) 1976. The basis for allocating the funds to state and local areas is specified in legislation; however, in general the executive departments select the actual data to be used and determine the mechanism by which the entitlements are computed. This article reviews these 13 programs—which are the basis for a large portion of the federal funds distributed to state and local governments—and describes the characteristics of the formulas, allocation process, and some limitations of the data.

The structure of allocation formulas has been described by Oates (1972) and Mishan (1976). Oates identifies three basic types of grants: (a) matching grants in which the federal government gives an amount X to the local government for each amount Y spent in a specified program (see Sec. 2.6 of this article); (b) unconditional intergovernmental grants in which federal funds are given to local governments without specifying how these funds must be spent (see Sec. 2.12); and (c) conditional grants in which federal funds are given to local governments to be spent in specific programs (see Sec. 2.10). Although the structure of grants may help explain how the allocation of federal funds to local areas functions, an analysis of how it works must take into account the political process and pragmatic considerations that add to the complexity of these programs.

Table 2 gives a brief description of the purpose of each of the 13 programs, the principal formulas each uses, and the data elements in the formulas.[1] Section 2 describes each of these allocation formulas. Section 3 describes the goals of the *Report on Statistics for Allocation of Funds* (U.S. Department of Commerce 1978). Specific recommendations of this report are reviewed in the light of the characteristics of the 13 programs. In Section 4, selected problems of allocating federal funds to state and local governments are analyzed. The general implications for data and formulas used for allocation of funds are looked at in terms of possible alternatives and long-range implications.

2. FORMULAS AND DATA USED FOR ALLOCATION OF FUNDS

2.1 Educationally Deprived Children

Under this program $1.6 billion were distributed to local education authorities (LEA's) in FY 1976. This program provided aid to elementary and secondary schools to help educationally deprived children. However, the federal government allocates the funds to counties based on specific formulas; the county distributes the funds to LEA's whenever the LEA is not coterminous with the county. The state education departments help the counties make the subcounty allocations. This two-tiered procedure is carried out because of a lack of adequate data for *direct* subcounty allocation by the federal government (Table 2A). An additive formula with two variables as basic input is used to determine the number of eligible children: (a) the number of poverty children from the 1970 Census of Population and (b) the number of children in families receiving aid to families with dependent children (AFDC) who were above the poverty line for nonfarm families of four. The initial estimate of authorization for counties is the maximum of (a) 85 percent of the previous year's entitlement or (b) the product of eligible children and the estimated per pupil

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[1] These descriptions are based on program descriptions prepared by the Office of Management and Budget (OMB) for Congressman Fascell (D–Florida) and by the case studies included in the *Report on Statistics for Allocation of Funds* (U.S. Department of Commerce 1978). I would like to thank Lawrence Hush, OMB, for making the descriptions available to me.

1. Federal Funds Distributed by Selected Major Programs to State and Local Areas

Program Title	Catalog of Federal and Domestic Assistance Number	Millions of Dollars in Fiscal Year		
		1976*	(estimate) 1977	(estimate) 1978
Educationally deprived children—local educational agencies	13 428	1,625	1,721	1,927
School assistance in federally affected areas—maintenance and operations	13 478	754	766	370
Rehabilitation services and facilities—basic support	13 624	900	740	760
Social services for low-income and public assistance	13 642	2,485	2,470	2,401
Medical assistance program	13 714	10,678	10,229	11,816
Aid to families with dependent children	13 761	7,328	6,213	6,657
Community development block grants/entitlement grants	14 218	2,471	2,831	2,812
Law enforcement assistance—improving and strengthening law enforcement	16 502	548	350	284
Comprehensive employment and training programs	17 232	5,903	6,257	8,346
Highway research, planning, and construction	20 205	6,157	7,634	6,545
Construction grants for wastewater treatment works	66 418	4,947	6,600	5,590
General revenue sharing	NA	6,355	6,655	6,855
Antirecession financial assistance	NA	—	1,699	1,572
TOTAL	—	50,151	54,167	56,935

* Transition quarter included

Source: Financial data are obligations from the 1977 *Catalog of Federal Domestic Assistance, 1977 Update*, for programs with catalog numbers; otherwise, they are obligations from *The Budget of the United States Government, Appendix*, 1978 and 1979.

expenditures. If the sum of the initial county and state authorization is larger than all funds appropriated, a pro rata reduction is carried out subject to certain constraints.

Several features of this procedure are often used in other formula allocations. It is common to establish hold-harmless provisions or minimum amounts of entitlement based on previous program levels. For example, in this program, counties will receive at least 85 percent of last year's entitlement, and states will receive at least $150,000 for administration. Another procedure often used in the allocation of funds is to reduce initial estimates of entitlement so that the total dollars distributed will equal the amount of funds appropriated by Congress to be distributed by this program to state and local areas.

2.2 School Assistance in Federally Affected Areas

Under this program $754 million were distributed in FY 1976 (Table 2B). This program is designed to provide assistance to LEA's for maintenance of federal property and aid children living on federal property. Funds are distributed under both sections 2 and 3 of the authorizing act, using multiplicative formulas. For example, the allocation under section 2 is the product of the current tax rate for each LEA and the assessed value of specified federal property acquired since 1938 in the LEA. Several hold-harmless provisions exist that establish minimum amounts for allocation to be received by the LEA; usually these hold-harmless provisions establish that funds received in a given year should not be less than a specified percentage of the funds received the previous year by the LEA.

2.3 Rehabilitation Services and Support

This program provides 80 percent matching funds to state vocational rehabilitation agencies to assist physically and mentally handicapped individuals to become gainfully employed (Table 2C). In FY 1976 $900 million were obligated for this program. For each state a federal allotment percentage (FAP) is determined as follows:

$$FAP_i = 100 - 50\left[\frac{\bar{I}_i}{\bar{I}_{us}}\right].$$

The average per capita income ($\bar{I}_i$) is a three-year average of the latest three years for which per capita income data were published by the Bureau of Economic Analysis. The FAP cannot be less than 33⅓ percent or greater than 75 percent. The initial state entitlement is determined by three computations: (a) Obtain the product of the current state population and the square of the FAP; (b) determine the ratio of this product to the sum of the products for all states; (c) multiply this ratio by the dollars obligated for the program. A minimum amount is established for all state entitlements. If the computed estimate for a state is below this minimum, the funds are increased to the minimum and the allotment to other states is reduced proportionally.

2.4 Social Services for Low-Income and Public Assistance

This program provides funds to state governments for services to AFDC recipients and low-income families. In FY 1976 $2.5 billion were distributed. The states provide matching funds: 25 percent for most programs (Table 2D). The federal funds are allocated in proportion to state population relative to the U.S. population. The population estimates correspond to the estimates for the first day of the third month preceding the FY for which the allotment is being made (e.g., July 1, 1979, for FY 1980).

2.5 Medical Assistance Program (Medicaid)

This program provides matching funds for states to purchase medical services for eligible low-income

2. Summary Characteristics of Data and Formulas Used by Selected Major Programs in Distributing Federal Funds to State and Local Areas

Program	*Summary of Formula*	*Data Elements*
A. Educationally deprived children—local educational agencies (Title I of the Elementary and Secondary Education Act of 1965 as amended, 13.428) This is the major program of federal aid for elementary and secondary schools. Funds are given to local education authorities (LEA's) to help educationally deprived children. However, because of limitations in the data, the federal government will allocate funds to counties through specified formulas. If the LEA is not coterminous with the county, the county will make the subcounty allocations with the help of the state education departments.	Eligible children: $E_{ij} = P_{ij} + .67A_{ij} + O_{ij}$ Expenditures per pupil: $D_i = \text{median}\,[.32N, .4Q_i, .48N]$ Maximum authorization per county: $G_{ij} = \max\,[(.85L_{ij}), (E_{ij}D_i)]$ Maximum authorization for children in state-operated institutions: $C_{im} = \max\,[(S_{im}D_i), H_{im}]$ Maximum authorization for state administration: $V_i = \max\,[B, .01(C_i + \sum_j G_{ij})]$ Title I has never been fully funded and the following ratable reduction procedure is followed: $W_1 = T/(\sum_i \sum_j G_{ij} + \sum_i V_i)$ $X_{ij1} = W_1 G_{ij}$ $Y_{ij1} = \max\,[.85L_{ij}, X_{ij1}]$ $U_{i1} = \max\,[B, .01(C_i + \sum_j Y_{ij1})]$ If $\sum_i \sum_j Y_{ij1} + \sum_i U_{i1} > T$, the ratable reduction is repeated.	E_{ij}: eligible children D_i: per pupil expenditure for state formula P_{ij}: poverty children from 1970 Census of population A_{ij}: children in families receiving AFDC & above poverty line for nonfarm family of four from SSA O_{ij}: other eligible children from ED and SSA N: per pupil expenditure for nation (NCES) Q_i: per pupil expenditure for state (NCES) L_{ij}: previous year's allotment for grants to county S_{im}: eligible population in state-operated institutions (ED) H_{im}: previous year's authorization for children in state-operated institutions (NCES) B: minimum administration allowance per state ($150,000 by legislation) i: denotes state j: denotes county m: denotes state agency with institutions caring for eligible children
B. School assistance in federally affected areas—maintenance and operations (Title I of P.L. 81–874, amended; 13.478) This act provides assistance to LEA's for federally owned property maintenance or for aid to children living in federal property within their area (only sections 2 and 3 are discussed).	Section 2: $E_i = A_i T_i$ Section 3: $E_i = C_i P$ Several hold-harmless provisions exist, such as: An eligible LEA will not receive less than 80% of the previous year's payment under section 3.	A_i: assessed value of federal property acquired since 1938 in LEA_i and with assessed value in that year of 10% or more of assessed value of all real property in LEA_i T_i: current tax rate for LEA_i C_i: children entitled in LEA_i are those who live on federal property and whose parents work on federal property or are in one of the uniformed services P: rate of payment per child based on expenditures per pupil for "comparable districts" or a minimum national or state per pupil cost
C. Rehabilitation services and facilities—basic support (section 110 of the Rehabilitation Act of 1973; 13.624) The act provides 80% matching funds to state vocational rehabilitation agencies for vocational rehabilitation services to assist physically and mentally handicapped individuals to become gainfully employed.	1. Determine average per capita income ($\bar{I}$) for each state, i, and for the 50 states and D.C. combined for the last 3 years ($\bar{I}_i$). 2. Federal allotment percentage $(\text{FAP}_i) = \left[100 - 50\frac{\bar{I}_i}{\bar{I}_{us}}\right]$ Constraints: FAP $\leq$ 75% and FAP $\geq$ 33⅓%. 3. State entitlement $= \$_T\left[\frac{P_i(\text{FAP}_i)^2}{\sum_i P_i(\text{FAP}_i)^2}\right]$ If state entitlement is less than $2 million or .25% (whichever is greater), the state shall be increased to the minimum by proportionally reducing the allotments to other states.	$\bar{I}$: per capita income for states and D.C. is provided by the Bureau of Economic Analysis P: population for states is taken from the latest P–25 publication of the Bureau of the Census $\$_T$: total dollars obligated for this program

2. *(Continued)*

Program	*Summary of Formula*	*Data Elements*
D. Social services for low-income and public assistance (Title XX of Social Security Act, 13.642) Funds are given to state governments for services to AFDC recipients and low-income families. For all services states match 25%, except for family planning services states match 10% and no matching funds are required for child day care services.	$\$_T \left\{\frac{P_i}{P_{us}}\right\}$ $\$_T$ is \$2.5 billion for social services and \$200 million for child day care services.	P_i: the state population data used are the estimates for the first day of the 3rd month of the fiscal year preceding the year for which the allotment is made
E. Medical Assistance Program (Medicaid—Title XIX of Social Security Act, 13.714) The act provides matching funds for states to purchase medical services for eligible low-income individuals and families. Specific administrative expenses are also partially covered.	The federal medical assistance percentage (FMAP) for state i is determined as: $A_i = 100 - 45 \left\{\frac{\bar{I}_i}{\bar{I}_{us}}\right\}^2$ $\text{FMAP}_i = \min\,[83, \max\,(A_i, 50)]$ Constraints: FMAP $\leq$ 83% and FMAP $\geq$ 50%.	$\bar{I}_i$: the 3-year average per capita income for state i as published by the Bureau of Economic Analysis $\bar{I}_{us}$: the 3-year average per capita income for the U.S. as published by the Bureau of Economic Analysis
F. Aid to Families With Dependent Children (AFDC; 13.761) This program establishes a federal contribution to welfare programs legislated and run by states. Variable matching grants are given to states; the rate of federal matching funds is higher for states with low per capita income. Persons receiving AFDC are automatically eligible to receive food stamps and medicaid benefits.	States can choose their reimbursement (R_1, R_2) each quarter as the higher of two formulas: 1. $R_1 = \frac{5}{6}A + FP(B - A)$ where $A = \min\,[18N_m, (P_M + P_{FC})]$ $B = \min\,(P_m, 32N_m) + \min\,(P_{FC}, 100N_{FC})$ $FP_i = 100 - 50 \left\{\frac{\bar{I}_i}{\bar{I}_{us}}\right\}^2$ with constraints: $FP_i \geq 50\%$ and $FP_i \leq 65\%$. 2. $R_2 = \text{FMAP}_i(P_M + P_{FC})$ where $\text{FMAP}_i = 100 - 45 \left\{\frac{\bar{I}_i}{\bar{I}_{us}}\right\}^2$ with constraints: $\text{FMAP}_i \geq 50\%$ and $\text{FMAP}_i \leq 83\%$.	N_m: number of recipients receiving money payment N_{FC}: number of children receiving foster care P_M: allowable money payments P_{FC}: payments for foster care FP_i: federal percentage $\bar{I}_i$ and $\bar{I}_{us}$: see definitions given in program E (Medicaid) FMAP_i: federal medical assistance percentage
G. Community Development Block Grants (CDBG) (Title I of the Housing and Community Development Act of 1974, as amended; 14.218) This program allocates funds to local areas to provide decent housing and a suitable living environment for persons of low and moderate income.	80% funds for SMSA's 20% funds for non-SMSA's Hold-harmless provision is phased out in 5 years. The larger of two formulas is chosen: (A) $\frac{1}{4}\left\{\frac{\text{Area population}}{\text{Total population for all areas}}\right\} + \frac{1}{2}\left\{\frac{\text{Area poverty count}}{\text{Total poverty count for all areas}}\right\} + \frac{1}{4}\left\{\frac{\text{Area overcrowded dwelling units}}{\text{Total overcrowded dwelling units for all areas}}\right\}$ (B) $.20\left\{\frac{\text{Area growth lag}}{\text{Total growth lag for all areas}}\right\} + .30\left\{\frac{\text{Area poverty count}}{\text{Total poverty count for all areas}}\right\}$	Population: the most current estimates from the Bureau of the Census Poverty: from the 1970 Census of Population Overcrowded dwelling units: from the 1970 Census of Population (number of dwellings with more than 1.01 persons per room) Age of housing: the number of existing year-round housing units constructed in 1939 or earlier from the 1970 Census of Population Extent of growth lag: the number of persons who would have been residents in a metropolitan city or county, in excess of current population, if the population growth between 1960 and the date of the most recent population count had been equal to the population growth rate of all metropolitan cities or urban counties

2. (Continued)

Program	Summary of Formula	Data Elements
	$+ 50 \left\vert \frac{\text{Area age of housing}}{\text{Total age of housing for all areas}} \right\vert$ To the initial entitlement, any appropriate hold-harmless credits are added, if needed, a pro rata reduction is carried out to conform with the total funds appropriated	
H. Law Enforcement Assistance — improving and strengthening law enforcement (Title I of the Omnibus Crime Control and Safe Streets Act of 1968 as amended; 16.502) Block grants to states with population-based formula: 85% of LEAA part C appropriation and 50% of part E appropriations. Each state must pass through to local governments a variable percentage of block grant awards based on state and local expenditures for criminal justice the preceding fiscal year. The amounts for individual jurisdictions are determined by the state planning agencies based on applications from the localities (not by LEAA).	1. $\frac{P_i}{\sum P_i}$ [part C appropriations] 2. $\frac{P_i}{\sum P_i}$ [part E appropriations] 3. Pass through to localities $= \frac{\text{Local expenditure on criminal justice}}{\text{State and local expenditure on criminal justice}}$ [State allocation]	P_i Bureau of the Census latest State estimates of population State and local expenditures on criminal justice are collected by the Bureau of the Census in the *Survey of Criminal Justice Employment and Expenditures*
I. Comprehensive Employment and Training Act (CETA, 17.232) The act states as its purpose, "to provide job training and employment opportunities for economically disadvantaged, unemployed, and under-employed persons . . . and enhance self-sufficiency by establishing a flexible and decentralized system of federal, state and local programs." Therefore, a much greater involvement of state and local governments was sought because they could be more responsive to the local manpower problems. (Only Titles I, II, and VI are discussed.)	Title I: 80% of funds will be distributed to prime sponsors, *i*: $E_i = \left[50 \left\vert \frac{E_i^*}{\sum E_i^*} \right\vert + .375 \left\vert \frac{U_i}{\sum U_i} \right\vert + .125 \left\vert \frac{LI_i}{\sum U_i} \right\vert \right] .8E$ Title I: 20% of funds will be distributed. —6% Secretary of Labor's discretion, but no prime sponsor should receive less than 90% of last year's funds —5% consortium incentives —5% supplementary vocational grants to governors —4% governors' discretion. Title II: 80% given to areas of substantial unemployment, U_i^* $E_i' = \frac{U_i^*}{\sum_i U_i^*} (.8E')$, 20% at discretion of the Secretary of Labor. Title VI: 90% of these funds are distributed as follows: $E_i'' = \left[.5 \left(\frac{U_i}{\sum U_i} \right) + .25 \left(\frac{U_i^*}{\sum U_i^*} \right) + .25 \left(\frac{U_i^{**}}{\sum U_i^{**}} \right) \right] .9E''$, and 10% of Title VI funds are distributed at the Secretary of Labor's discretion.	E: entitlement for Title I E^*: previous year's entitlement for Title I U_i: unemployed for prime sponsor *i* from a federal/state cooperative program based on unemployment insurance data. CPS data is used for state estimates and benchmarking LI_i: adults in low-income families based on CPS and 1970 Census data U_i^*: substantial unemployment is defined as the number of unemployed in areas with unemployment rates over 6.5% for 3 consecutive months U_i^{**}: the number of unemployed in excess of 4.5 percent E': entitlement for Title II E'': entitlement for Title VI
J. Highway research, planning and construction (Title 23, U.S. Code, 20.205) This is the federal aid program through which the national and state governments, as partners, construct the principal network of highways throughout the U.S.	Each program has a separate formula, which often specifies a minimum allocation of, say, .5%. Selected systems follow. For primary systems the formula is: $\frac{2}{9} \left\vert \frac{A_i}{\sum A_i} \right\vert + \frac{2}{9} \left\vert \frac{R_i}{\sum R_i} \right\vert + \frac{2}{9} \left\vert \frac{D_i}{\sum D_i} \right\vert + \frac{1}{3} \left\vert \frac{UR_i}{\sum UR_i} \right\vert$	A_i: area of state R_i: rural population of state from the 1970 Census of Population D_i: rural delivery is route mileage and intercity mail route mileage certified by Postmaster General UR_i: urban population for places of 5,000 or more, 1970 Census of Population

2. *(Continued)*

Program	Summary of Formula	Data Elements
	Constraint: minimum state allocation .5%. For interstate system (resurfacing, restoration and rehabilitation): $\frac{M_i}{\sum M_i}$ Constraint: minimum state allocation .5%. For high-hazard locations and roadside obstacles, the allocation formula is: $\frac{3}{4}\left[\frac{P_i}{\sum P_i}\right]+\frac{1}{4}\left[\frac{PM_i}{\sum PM_i}\right]$ Constraint: minimum state allocation .5%.	M_i, lane miles in use 5 years or more from state's inventory of interstate system P_i, total population, 1970 Census PM_i, public road mileage, state inventory
K. Construction grants for wastewater treatment works (66.418) The Environmental Protection Agency (EPA) awards grants to states for projects based on (a) severity of pollution problems, (b) existing population affected, (c) need for preservation of high quality waters, (d) at the state's option, the category of need addressed.	Funds are distributed based on population and need. No state shall receive less than .5% of the total funds. House formula: $H_i = .5\frac{N_{ai}}{\sum N_{ai}} + .25\frac{N_{bi}}{\sum N_{bi}} + .25\frac{P_i}{\sum P_i}$. Senate formula: 1. $S_{1i} = \max\left[\frac{P_i}{\sum P_i}, \frac{N_{ci}}{\sum_i N_{ci}}\right]$. 2. Sum S_{1i} and prorate so that sum of adjusted S_{1i} is 100%. 3. Check $S_{1i} \geq 0.5\%$. 4. Check $S_{1i} \geq \min\left[\frac{P_i}{\sum P_i}, \frac{N_{ci}}{\sum_i N_{ci}}\right]$ 5. Check $.75(.0110) < S_{1i}$. 6. Sum S_{1i} and prorate so that sum is adjusted to 100%; this gives S_i. Compromise formula: $A_i = ½H_i + ½S_i$	P_i is the state population as published in P-25, No. 615 for July 1975 by the Bureau of the Census Needs survey is carried out to determine state-by-state costs of construction of various components of publicly owned wastewater facilities. Based on these data, on 1975 population, and the projected population for 1990 (from Census Series I-E), three components of need are determined, N_{ai}, N_{bi}, and N_{ci}.
L. General Revenue Sharing (Title I of the State and Local Fiscal Assistance Act of 1972 as amended by the State and Local Assistance Act of 1976) Funds are given to all general units of government (about 39,000) for general financial assistance.	Allocation to States: 1. Senate version: $S_i = \frac{P_iT_i[I_i/I_{us}]}{\sum P_iT_i[I_i/I_{us}]}$ 2. House version: $H_i = \frac{2}{9}\frac{P_i}{\sum P_i} + \frac{2}{9}\frac{P_i/I_i}{\sum P_i/I_i} + \frac{2}{9}\frac{UP_i}{\sum UP_i} + \frac{1}{6}\frac{T_i}{\sum T_i} + \frac{1}{6}\frac{ST_i}{\sum ST_i}$ 3. Choose max (S_i,H_i) and adjust proportionally so that sum of weights is one. Within-state allocation: 1. Two-thirds of the state allocation goes to units of local government within the state; one-third goes to the state. 2. Per capita entitlement $= \frac{L\$_i}{P_i}$. 3. $L_c = \frac{P_cT_c[I_c/I_i]}{\sum_c P_cT_c[I_c/I_i]}$.	P_i: population for state i, based on Bureau of the Census current estimates, published in series P-25 P_c: population for county c, from Bureau of the Census current estimates UP_i: urbanized population for state i, based on 1970 Census estimates of the Bureau of the Census I_i; I_c: per capita income for state i (county c) is total money income divided by population, published by the Bureau of the Census in series P-25 T_i; T_c: tax effort for state i (county c) is computed as state and local taxes (Bureau of the Census Survey) divided by personal income (BEA) ST_i: state income tax is collected through the General Revenue Sharing Survey $L\$_i$: entitlement for local areas within state i; this is ⅔ of state entitlement

2. *(Continued)*

Program	*Summary of Formula*	*Data Elements*
	4. Constraints: If $L_c > 1.45(PCE)P_c$, then L_c is reduced to 145% of per capita entitlement. (PCE) If $L_c < .2(PCE)P_c$, then L_c is raised to 20% of per capita entitlement level. 5. Each local government receives, in turn, allocations like those for counties, based on population × tax effort × relative income. The constraints apply as in (4). If a unit receives more than 50% of its adjusted taxes and transfers, its allocation is reduced to that level and excess goes to government at next higher level. NOTE: Process is repeated until 100% of entitlement is distributed. Some special cases are not covered.	
M. Antirecession financial assistance (Title II of the Public Works Employment Act of 1976 as amended by the Intergovernmental Antirecession Assistance Act of 1977) General units of government of high unemployment are eligible to receive funds; payments go to about 20,000 eligible governments each quarter. Funds are distributed to state and local areas if the national unemployment rate is greater than 6%.	If national unemployment rate for a quarter is >6%, then the total dollars distributed is \$125 million + \$30 million × (no. of .1% above 6% of seasonally adjusted estimate). One-third of total dollars are for states, and two-thirds for local governments. $\text{State}_i: \left[\frac{(u_i - 4.5)RS_i}{\sum_i \text{of product for all states}}\right]\frac{\$}{3}$ $\text{Local}_k: \left[\frac{(u_k - 4.5)RS_k}{\sum_k \text{of product for all local governments}}\right]\frac{2\$}{3}$	*u*: unemployment rate during calendar quarter as published by the Department of Labor for all states and 4,300 local areas. Other local governments are assigned unemployment rate for next larger unit of government where located. Quarter ending 3 months before payment is appropriate. *RS*: revenue sharing amount is the general revenue sharing allocation for the most recent entitlement period for each recipient government. \$: Total entitlement

individuals and families (Table 2E). In FY 1976 \$10.7 billion were obligated for this program. The federal matching funds are determined on the basis of the federal medical assistance percentage (FMAP). For each state *i*

$$A_i = 100 - 45\left[\frac{I_i}{I_{us}}\right]^2.$$

The result of this computation is used as the FMAP for that state unless it is greater than 83 percent or less than 50 percent, in which case, the FMAP will be 83 percent or 50 percent. For states with a high per capita income relative to the U.S. per capita income, the percentage matched by federal funds will be lower than for states with a low per capita income relative to the U.S.

2.6 Aid to Families With Dependent Children (AFDC)

This program provides variable matching grants to states for welfare programs legislated and run by the states (Table 2F). In FY 1976 \$7.3 billion were obligated under this program. Federal matching rates are higher for states with lower per capita income. States can choose their reimbursements each quarter as the higher of two formulas. One formula uses a federal percentage (FP), defined as follows:

$$FP_i = 100 - 50\left[\frac{I_i}{I_{us}}\right]^2.$$

This FP cannot be higher than 65 percent or less than 50 percent. The formula uses the FP multiplied by factors that depend on the number of recipients receiving money payments, those in foster care, allowable money payments (maximum \$32), and payments for foster care (maximum \$100). The second formula uses the FMAP described in Section 2.5. The entitlement is the product of the FMAP and the sum of the allowable money payments and the payments for foster care. The states may influence the total level of AFDC payments received because they can set eligibility standards, adjust payment standards, and make it easy or difficult for eligible persons to get on the AFDC rolls (U.S. Department of Commerce 1978, p. 44).

2.7 Community Development Block Grants

This program aims to develop viable urban communities, including decent housing and a suitable living environment, principally for persons of low and moderate income (Table 2G). In FY 1976, \$2.5 billion were obligated for this program. The amended Housing and Community Development Act of 1974 established that major cities and many large urban counties were entitled to receive funds based on the larger value from two formulas: Formula A uses the weighted value of ratios based on population, poverty (given a weight of 2), and overcrowded dwellings; formula B uses ratios based on growth lag, poverty (given a weight of 1.5), and age of housing (given a weight of 2.5). For each element in the formulas, the ratio of the value for the areas to the total for all areas is used. After the larger of formula A or B is chosen, any hold-harmless credits are added; if the funds appropriated are less than the sum of all entitlements, a pro rata reduction is applied to all initial entitlement amounts. Programs that allocate federal funds to local governments often define two formulas and allow entitlement areas to choose the one with the higher value. This procedure permits differential weighting of relevant factors.

2.8 Law Enforcement Assistance—Improving and Strengthening Law Enforcement

This program uses a two-tiered approach to provide block grants to states in proportion to the latest state population estimates published by the Bureau of the Census. Each state must then allocate to local governments a variable percentage of block grant awards based on state and local expenditures for criminal justice the preceding fiscal year. The amounts for local jurisdictions are determined by the state planning agencies (not by the Law Enforcement Assistance Administration (LEAA)) based on applications from the localities (Table 2H). The funds distributed for this program in FY 1976 were $548 million.

2.9 Comprehensive Employment and Training Act (CETA) of 1973

This program provides job training and employment opportunities for economically disadvantaged and unemployed persons through a flexible and decentralized system of federal, state, and local programs (Table 2I). During FY 1976 $5.9 billion were obligated by this program. We will only discuss Title I of CETA. Eighty percent of Title I funds were distributed to prime sponsors (areas of at least 100,000 in population) based on the weighted sum of three factors: (a) proportion of previous year's entitlement for Title I of the prime sponsor to the total (weighted 50 percent); (b) estimated ratio of unemployment of the prime sponsor, based on benchmarked unemployment insurance data to total unemployed based on the Current Population Survey (CPS) (weighted 37.5 percent); and (c) proportion of adults in low-income families of the prime sponsor to the total based on CPS and 1970 Census data (weighted 12.5 percent). The other 20 percent of Title I funds represent various discretionary funds distributed to the prime sponsors.

The difficulty of obtaining adequate current statistical data for the allocation of federal funds to state and local areas is illustrated by the CETA Title I formula. Data on the previous year's entitlement for Title I should be readily available. However, current unemployment estimates for prime sponsors, which may be areas of 100,000 in population, are very difficult to obtain. The basic estimates used by the Department of Labor follow a Handbook method, which covers about 70 steps. This method essentially adds an estimate of unemployed in noncovered industries and an estimate for unemployed who reenter or initially enter the labor force to the count of insured unemployed. The initial small area estimates are benchmarked to the state unemployment based on the CPS. These unemployment estimates may be subject to a high degree of error. However, the legislation establishes prime sponsor areas of 100,000 in population for which good current estimates are not readily available.

2.10 Highway Research, Planning, and Construction

Under this program the federal and state governments, as partners, construct the principal network of U.S. highways (Table 2J). The funds obligated for this program in FY 1976 were $6.2 billion. For the primary highway system the formula used to distribute the funds is the weighted sum of four factors: (a) area of the state in proportion to total U.S. area (2/9 weight); (b) rural population of the state in proportion to total U.S. rural population from the 1970 Census of Population (2/9 weight); (c) rural delivery route mileage for the state in proportion to total U.S. rural delivery as certified by the Postmaster General (2/9 weight); and (d) urban population for places of 5,000 or more for the state in proportion to the corresponding U.S. total from the 1970 Census of Population (1/3 weight). There is a constraint that the minimum state allocation proportion should be .5 percent. In this case, the data elements of the distribution formula are readily available. However, the two elements that are obtained from the 1970 Census of Population represent out-of-date measures for allocations in FY 1979.

2.11 Construction Grants for Wastewater Treatment Works

This program provides grants to states based on (a) severity of problems, (b) existing population affected, and (c) need for preservation of high quality waters (Table 2K). During FY 1976 $4.9 billion were obligated for this program. The data elements used in this program are state population estimates for July 1975, published by the Bureau of the Census, and various components of need determined by a survey to estimate cost of construction of publicly owned wastewater facilities. In determining these needs, the projected population for 1990, prepared by the Bureau of Economic Analysis (BEA) and based on Census Series I–E, is compared with the population for July 1975. This program includes both a House formula and a Senate formula. The House formula is additive with three components: (a) a needs factor that includes costs for secondary treatment plants, weighted double (N_{ai}); (b) a needs factor that includes rehabilitation of sewers and control of sewer overflow (N_{bi}); (c) and state population for July 1975. Each factor is a ratio of the state estimate to the sum for all states. The Senate formula chooses the larger of the state population ratio and the ratio of a third set of needs estimates for the state (N_{ri}). These initial entitlement estimates are prorated so that they sum to 100 percent. The next step is to check that the Senate percentage for each state is at least .5 percent. This process is repeated until the sum of the state percentages based on the Senate formula equals 100 percent. After both the House and Senate formulas have been computed, the compromise state entitlement percentage is obtained by weighting the two estimates equally.

2.12 General Revenue Sharing (GRS)

This program gives funds to all 39,000 general units of government for general financial assistance (Table 2L). In FY 1976 $6.4 billion were obligated under this program. For the funds distributed to the states there is both a Senate formula and a House formula. The Senate formula is multiplicative and uses three factors: current state population estimates, tax effort by the state, and state per capita income. This value for a given state is divided by the sum of those products for all states. The House formula is additive and uses five factors: population (2/9 weight), population divided by per capita income (2/9 weight), 1970 urbanized population (2/9 weight), tax effort (1/6 weight), and state income tax (1/6 weight). Each of the factors used is defined as the ratio of the estimate for the state to the sum for all states. For each state, the larger value of the House and Senate formulas is selected. All the state values are then adjusted proportionally so that the sum of all weights is one. Two-thirds of the state's allocation is passed on to units of local government within the state; the other third is kept by the state.

For substate allocation, per capita entitlement is determined as two-thirds of the state's entitlement divided by the state population. For counties, a factor is determined that is the product of population, tax effort, and the ratio of county per capita income to state per capita income divided by the sum of these products for all counties. This factor usually determines the county entitlement. However, if the factor is greater than 145 percent of the per capita entitlement, then the entitlement is reduced to this value; if the factor is less than 20 percent of the per capita entitlement, then it is raised to 20 percent of the per capita entitlement level. A similar distribution is carried out for local governments below the county level.

The distribution of funds in GRS to 39,000 units of local government requires current data on population, tax effort, and per capita income for very small areas. At the time of a decennial census the data on population and per capita income are available. A large program has been carried out to develop intercensal per capita income estimates for small areas (Fay and Herriot 1979). Another feature of the allocation formulas that has resulted in unforeseen consequences is the ceiling (145 percent) and floor (20 percent) established for distribution of funds within states. The 20 percent minimum has determined that some local governments with few responsibilities have received special funds; the 145 percent maximum has limited the amount received by other local governments.

2.13 Antirecession Financial Assistance

This program provides funds to general units of government with high unemployment rates, provided the national unemployment rate is greater than 6 percent for a quarter (Table 2M). The funds distributed by this program per quarter are $125 million plus $30 million for every .1 percent above 6 percent of the seasonally adjusted unemployment rate. State funding is determined by multiplying the state unemployment rate in excess of 4.5 percent by the state revenue sharing entitlement and dividing this number by the sum of these products for all states. The state entitlement is this ratio multiplied by one-third of the total funding. The other two-thirds are distributed among local governments by using an equivalent formula. About 20,000 governments are eligible each quarter. The estimates of unemployment rates used correspond to those published by the Department of Labor for all states and 4,300 local areas. For other local governments, one assigns the unemployment rate corresponding to the next larger unit of government. The formula for this program uses the excess unemployment (that above 4.5 percent) to determine the entitlement. This type of formula provides more funds to areas with more severe unemployment problems. The difficulty of obtaining unemployment estimates for 20,000 or more local governments has been ameliorated by assigning the unemployment rate of the larger area, in which the small area is located, to those areas not among the 4,300 for which unemployment data are published. The use of the revenue sharing entitlement as an element of this formula ties the two programs and provides an estimate readily available to local governments.

3. AIMS OF *REPORT ON STATISTICS FOR ALLOCATION OF FUNDS*

The major objectives of the *Report on Statistics for Allocation of Funds* (U.S. Department of Commerce 1978) were to study the formulas and data being used for the allocation of federal funds to states and local areas and suggest ways in which the allocation process might be improved. The report includes five case studies that analyze how these programs allocate funds. These case studies point out some specific limitations of the process. Some general characteristics of different types of formulas were also considered.

Four recommendations given in the report are relevant to the issue of data and formulas used to allocate federal funds to state and local governments. We will state these recommendations, discuss them, and illustrate their implications by referring to the 13 programs described.

> Designation of Official Statistics:
>
> That the Office of Federal Statistical Policy and Standards, with the assistance of the statistical agencies, designate a limited

> number of additional official statistical series for use in funds allocation. These would be kept as current and as accurate as possible for states and for local areas.

The purpose of this recommendation is to select specific data series for use in fund allocation. The selected data series could be monitored carefully to assure high quality of data.

At present the statistics designated as official include population statistics (Bureau of the Census, *Current Population Reports* in Series P–25 and P–26, except when decennial census is more current), labor force and unemployment statistics as published by the Bureau of Labor Statistics, and poverty statistics as published in the Bureau of the Census Series P–60.

Many of the programs described use population statistics for allocation purposes. For example, the program of social services for low-income and public assistance (Table 2D) distributes funds in proportion to the state population; one of the alternative formulas used to distribute community development block grants (Table 2G, formula A) uses current estimates of population as one of three factors.

In addition to total population, some formulas use specific types of population, such as urban or rural (see Highway research, planning, and construction, Table 2J). These estimates are only available at the time of the decennial census and may become meaningless during the latter half of the decade. Intercensal estimates of total population for states, counties, and some age, sex, and race categories are available; however, data on urban and rural population are only available at the time of the decennial census because the definition of urban and rural geographic areas changes over time, and such demarcations and their corresponding populations are not available on a current basis.

Data for small areas may be required if the program specifies that the funds be allocated directly to these areas. These data are only available from a census or possibly from administrative records. The scope of information available from censuses is limited. When data are required for small geographic areas, current survey data may not fulfill these needs. Alternatively, using administrative records requires checking the accuracy of the data, as well as the consistency among the different entitlement areas. Often administrative records are compiled at the local level and the implementation of the overall guidelines may differ from area to area.

The designation of additional "official statistics" is suggested by the recommendation. The purpose of designating specific statistical series as official is that they be used for the allocation of funds. Data on per capita income are often used for the distribution of funds. Four of the thirteen programs discussed in Table 2 use data on per capita income. Therefore, per capita income might be investigated as a possible candidate for designation as official statistical series. The work done by Fay and Herriot (1979) in preparing updated estimates of per capita income to be used in the general revenue sharing program provides an efficient methodology for small area estimates.

> Data Comparability:
>
> That in tiered allocation programs comparable data should be used for allocation to States, but policy flexibility may be allowed for sub-State allocations. When the Federal Government allows this flexibility, it should be subject to the formulation of specific Federal statistical and administrative guidelines, concerning the designation of the responsible governmental unit for choosing among statistical series, for declaring the specific types of statistical series from which such a choice is permitted to be made, and for establishing administrative mechanisms for consideration of appeals from area governments.

The need for data comparability when distributing funds among competing jurisdictions (e.g., states) is recognized. However, at different levels of distribution (such as counties rather than states) different data may be available and allocations may be improved by recognizing the differences.

The recommendation on tiered allocation, using different data series for different levels of allocation, has already been used in selected programs. For example, Title I of the Elementary and Secondary Act of 1965 (ESEA) (Table 2A) computes the allocation to the county level; the allocation for the LEA's is determined by the state education department, based on requests from the LEA's. In the GRS program (Table 2L), the allocation to states uses different data and formulas from those used to determine allocation to counties and local governments. The LEAA gives block grants to states (Table 2H). A variable percentage of the state funds, based on specifications given in the law (in this case, on expenditures on criminal justice) must be passed on to the local governments. However, the dollar amount given to individual jurisdictions is based on applications from the localities to the state planning agencies (SPA's). The final amount given to the local jurisdictions is determined by the SPA and not by the LEAA. The legislation which establishes that the final allocation to local areas be determined on the basis of administrative decision recognizes that often current reliable data for small areas are not available; at the same time, the needs of individual areas could be evaluated in terms of projects to be carried out.

> Data Accuracy Goal:
>
> That since data errors are inevitable and since statistical resources are necessarily limited, priority be given to minimizing the very large errors which may occur in data used for the allocation of funds.

The objective of this recommendation is to minimize the overall error in the distribution of funds. For large areas a relatively small error may have an important effect on the total amount of funds distributed. For example, Title XX of the Social Security Act (Table 2D) distributes funds in proportion to the state population; for large states the errors in the estimated population have a greater impact on the total distribution than proportionally similar errors for smaller states. For smaller states one needs to ascertain that the relative errors are less than a predetermined amount. Competing types of error could be minimized for different programs. One would need to determine in what kinds of areas or subareas or in what types of target groups the errors in allocation are likely to be most damaging to the program's objectives. In some programs this may lead to minimizing allocation errors for large states, while in other programs one may strive to minimize allocation errors per recipient. In the case of data based on sample surveys, it is known that areas with smaller samples will have a higher sampling error than those with larger samples. Therefore, if a sample survey were being designed to provide state data, a larger sample size might be used in larger states (such as California, New York, Texas) than for smaller states. Alternatively, to minimize the error per recipient, smaller states should be oversampled. The discussion here emphasizes statistical considerations. However, in selecting data to determine allocation of funds, political considerations often make the process much more complex.

Problems of population undercount in the decennial census may be related to such factors as the racial/ethnic composition of the population for the area and to the urban/rural distribution of the population, and other factors such as income. Although various coverage-improvement procedures will be implemented for the 1980 Census, these procedures will not necessarily guarantee an accurate population count. In fact, the plans for the 1980 Census include a program for evaluation of coverage. This evaluation effort would provide estimates of undercount by state that might be used to adjust the 1980 Census counts. The estimates of population undercount by state will probably be available in the fall of 1981, and they could be the basis for improved estimates of population for the rest of the decade.

Eligibility Cutoffs:

> That, to minimize the effects of data errors, eligibility cutoffs be such that there is a gradual transition from receiving no allocation to receiving the full formula amount.

An eligibility cutoff is a specific value below which areas would not be eligible to receive benefits and above which areas would receive benefits. The Anti-recession Financial Assistance Act has an eligibility cutoff since it will distribute funds to state and local areas if the national unemployment rate for the quarter is above 6 percent (Table 2M). The formula for the distribution of the funds to state and local governments in this program illustrates the recommendation that there should be a gradual transition for receiving the funds. The formula for distribution establishes that the funds received be proportionate to the estimated unemployment rate above 4.5 percent for the area. The Comprehensive Employment and Training Act of 1973 presents an interesting contrast between the distribution of Title II and Title VI funds (Table 2I). In Title II an area is eligible if its unemployment rate is above 6.5 percent for three consecutive months; this is a sharp eligibility cutoff for which it is difficult to provide adequate data. Title VI, on the other hand, gives 25 percent of its funds in proportion to the unemployment in excess of 4.5 percent. Therefore, areas with unemployment below 4.5 percent are not eligible to receive any funds from this provision. The report of the National Commission on Employment and Unemployment Statistics (NCEUS 1979, p. 263) "recommends the use of graduated formulas wherever feasible."

4. ANALYSIS OF THE PROBLEM

A general recommendation of the *Report on Statistics for Allocation of Funds* was that an active interface should occur between drafters of legislation and the statistical program agencies. In drafting legislation, availability or quality of data for the entitlement areas is not sufficiently taken into consideration.

The report of the National Commission on Employment and Unemployment Statistics (NCEUS 1979, p. 261) suggests that quarterly or annual data might be used rather than monthly data. They also suggest that for some purposes quinquennial statistics could be used instead of annual data.

The size of the area for which statistical estimates are required versus the availability of these estimates must be considered. For example, at the time of the decennial censuses data are available for small geographic areas for the characteristics covered in the census. However, in 1979 the 1970 Census estimates are not current, and their use in allocating funds might lead to inequities. Intercensal estimates are only available for selected series. If the 1985 mid-decade census were conducted, it would provide selected data five years after the decennial census.

The formulas specified in the programs reviewed here are either additive or multiplicative, including some factors squared. The formulas often include constraints, such as maximum or minimum benefits. For additive formulas each factor may be given equal weight or different weights. The selection of the weights involves difficult decisions. For additive formulas, the errors in one factor are independent of the errors in the other factors. In multiplicative formulas, errors in any factor affect the total allocation. A compromise is often arrived at in Congress, and two formulas are used to determine the allocation. For example, in calculating the allocation to states, GRS (Table 2L) computes the House formula (which is additive using five factors) and the Senate formula (which is multiplicative using three factors), and then chooses the higher of the two allocations. These values are subsequently prorated to conform to the total entitlement. As a result, a given state could receive less than the lower amount of the formulas initially computed.

When Congress establishes a minimum or maximum benefit, the possible effects of such constraints should be fully understood. These constraints establish certain discontinuities that affect the size of the funds distributed. Minimum benefits may raise the actual program possibilities for small units of government that have limited administrative functions. For example, the GRS (Table 2L) establishes a minimum entitlement of 20 percent for local governments; this provision determined that many inactive local governments received an unexpected allocation of GRS funds. Maximum benefits may possibly restrain fulfilling even the real needs of other beneficiaries.

In some programs the eligibility of governmental units depends on criteria established in the authorizing legislation. For example, in CETA, Title II (Table 2I), areas of "substantial" unemployment are eligible to receive funds; "substantial" unemployment is defined as unemployment over 6.5 percent for three consecutive months. Therefore, a sharp eligibility criterion exists to determine which areas are eligible to receive funds. The cutoffs that establish eligibility of governmental units may result in excluding some potential beneficiaries from receiving funds because of data errors, and others may receive benefits they might not be entitled to. Such inequity might be counterbalanced by gradual transitions between receiving no benefits and receiving full benefits.

The distribution of funds to small areas requires data for these areas. Such data are not often available on a current basis since large costly sample surveys would be required. Four alternatives are: (a) to use census information—which may not be current; (b) to use data for larger geographic areas in which the small areas are located—which may not reflect important subarea differences; (c) to use statistical data based on administrative records—a method that needs to be further explored; (d) to allow allocation to be based on —possibly arbitrary—administrative decisions originating from requests of the small areas involved and constrained by the total funds available. The advantages and disadvantages of each alternative need to be evaluated to determine the best choice. This best choice must be determined by taking into consideration the objectives of each program.

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SECTION 2-3. DICTIONARY OF FORMULA ELEMENTS: DESCRIPTION OF FORMULA ELEMENTS USED IN FORMULA PROGRAMS

Formula Element Classification Scheme

The ACIR catalog presents codes for main categories of formula factors (which are referred to here as formula elements). For example, "P" represents total population and "(P)" any special segment of population. In order to express formulas algebraically, however, distinct designations for each formula element were required. It was decided to adapt the ACIR classification to this need by adding numeric designations for each specific sub-element. For example, total pouplation became "P1", rural population "P2", and urban population "P3". Several other adjustments to the ACIR classification were made and the following element classification was created for use in the Catalog of Formula Grant-in-Aid Programs as presented in Section 2-4:

Formula Elements Which Determine Basic Distributions:

D - Discretionary formula elements.
E - Expenditure formula elements.
I - Income formula elements, including per capita personal income and also such other population related income measures as number of persons in poverty, number of families in low income categories, etc.
L - Land formula elements (usually measures of total land area or land area of specific types or uses).
P - Population formula elements.
R - Other formula elements, including such difficult to classify measures as road mileage, miles of shoreline, number of live births, etc.
S - Student formula elements.
F - Equal amount distributed among states--that is, the formula specifies an amount which each state must receive. (Usually the formula provides for additional amounts of money to be distributed according to other formula elements.)

Formula Elements Which Act as Formula Constraints:

H - Prior funding level for recipients which determines the current minimum allotment ("hold-harmless").
M - Maximum amount for each recipient (sometimes specified as a dollar amount or sometimes as a maximum proportion of the total U.S. allotment).

N - Minimum amount (other than historical or hold-harmless)--
not part of the formula; however, if formula yields an
amount less than this sum, the minimum will be allocated
rather than the formula derived amount.

The Dictionary of Formula Elements, located at the end of this section--Appendix (2-3): 1, containts definitions for each of the subscripted categories of formula elements and is organized in the order presented above.

Formula elements are defined in the Dictionary in a general descriptive fashion because, in many cases, program legislation does not specify the technical definition or specific data sources. For this reason, it should be kept in mind that programs using the same formula element may be using different data bases for their actual formula computations.

Formula Elements and Their Diversity

Federal grant-in-aid formulas contain an overwhelming number and diversity of elements. The 147 categorical grant-in-aid programs utilize 188 distinct formula elements in addition to a variety of fixed or equal allocations, minima, maxima, and historical or hold-harlmess amounts. Since some elements are used in more than one formula, the number of times these elements are used is even larger--330. The breakdown by category is as follows:

TABLE (2-3): 1. NUMBER OF FORMULA ELEMENTS
AND FREQUENCY OF USE

	# of Elements	# of Times Used
D - Discretion	13	22
E - Expenditure	65	77
I - Income Related	11	32
L - Land	6	13
P - Population	42	120
R - Other	32	39
S - Student	19	19
	188	330

The task of obtaining data for such a variety of formula elements for each recipient jurisdiction (state, local government, or other) is a formidable one, as is the attempt to bring order and logic to bear on such an array. Nevertheless, the elements do fall into identifiable groups within each category described in the following section. And, as will be described in Section 3-3, the various categories can be generally related to a smaller and more manageable set of formula objectives.

Population

Population is by far the most frequently used type of formula element, found in 88 (60%) of the total 147 programs. Population subcategories include geographic breakdowns (urban vs. rural), age breakdowns (ages 15-19, ages 20-24, ages 25-65, age 65 and over, etc.), and categories of the population having special needs (unemployed population, AFDC recipients, disability beneficiary recipients, etc.).

Income

Income elements may be subdivided into two categories: measures of total or per capita personal income and measures of poverty or low income status. I1 (per capita income), I3 (total personal income), I6 (aggregate personal income per school age child), and I7 (rural per capita income) fall in the first category, while the remaining measures, including I2 (number of adults in low income families) and I4 (number of children aged 5 to 17 from families below poverty level in 1970 based on the "Orshansky" poverty index) fall into the second category. (The latter category could also be classified as a population category.)

Expenditures

Thirty-five percent, or 51 of the 147 programs, use expenditure formula elements to distribute allocations. The expenditure category can be broken down into a number of subcategories, including: prior year or current expenditures used as a means of proportionally distributing a fixed total sum of federal program money; program costs to be used as a basis for open-ended reimbursement; flat rate reimbursement amounts such as per diem rates for hospital care; expenditures for related programs which serve as an indicator of relative need, etc.

Land, Student, Other

Formula elements in these categories are, in general, used as measures of relative need such as non-federal commercial forest land area, number of students in State Marine Schools, miles of shoreline, number of paid hunting license holders, number of live births, etc.

Discretion

In 21 of the 147 programs (14%) the formula allows some or all of the federal program money to be distributed at the discretion of an official--usually the Secretary of the department administering the program. Federal legislation in some instances contains broadly defined directives or illustrative formula elements to serve as guidelines for discretionary action. In several instances the discretionary element is used in our typology to classify a formula element which appeared to be too vaguely defined in the legislation to allow the identification of specific measures, assuming that discretion would, in fact, determine the allocation.

Fixed Amounts

Twenty-nine percent of the formulas (43 out of 147) allocate a fixed sum of money to each state or set aside a proportion of the total U.S. allotment to be distributed equally among the states. Because this amount (F) is built into the formula as a distributional criterion, it has been distinguished from those elements which are classified as formula constraints. The fixed or equal amount, however, resembles a minimum constraint, in that it provides for a given amount regardless of need or effort indicated for a state.

Formula Constraints

Formula constraints represent a means of establishing minimum or maximum allocations. The "hold-harmless" or historical amount (H) establishes that no state will receive less than the amount or percentage of an amount received in some previous year.

Typically, the minimum (N), maximum (M), and "hold-harmless" (H) amounts are external to the formula--that is, these constraints are imposed after the formula has allocated the total U.S. allotment. Minimum or maximum amounts may be set at a dollar figure or expressed as a percentage of the total U.S. allocation for a particular program. Allotment ratios may also be constrained; however, these constraints do not establish a fixed dollar ceiling or floor and, therefore, have not been identified as maxima or minima.

Thirty-nine percent of the formulas (57 out of 147) are subject to formula constraints. Minima are used in 32 programs, maxima in 25 programs, and "hold-harmless" amounts in 21 programs.

APPENDIX (2-3): 1. DICTIONARY OF FORMULA ELEMENTS

Table	Formula Element	Page
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TABLE 1. DICTIONARY OF FORMULA ELEMENTS: DISCRETIONARY

D1 - "Extent of the seat belt law"--the Secretary is to issue criteria for evaluating State legislation requiring the use of seat belts.

D2 - Amounts given to States with unappropriated or unreserved public lands, nontaxable Indian lands, or other federal reservations, on basis of needs (to survey, construct and maintain public lands highways) as determined by the Secretary (preference to be given to projects located on a "Federal-Aid" system).

D3 - Discretion of the Secretary.

D4 - The remainder of funds is available to the Secretary for financial assistance as the Secretary deems appropriate, taking into account changes in rates of unemployment.

D5 - Discretion of the Secretary, in that the Secretary must develop an equitable formula.

D6 - Discretion of the Secretary, taking into account severity of unemployment within areas of substantial unemployment.

D7 - Discretion, based on a State's need for comprehensive water and related land resources planning programs.

D8 - Unassigned

D9 - Discretionary amount to be used at discretion of Commissioner for local education agencies whose allocation under Title I, Part A of the Elementary and Secondary Education Act of 1965 is 90% or less than that of preceding year. Part A includes Basic Grants to LEA's (subpart 1), and State Operated Programs-Handicapped Children, Migratory Children, Neglected or Delinquent Children (subpart 2).

D10 - Discretion of the Commissioner to use up to 10% of appropriated funds to make grants, as specified, for Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activity.

D11 - Extent of protection job required for Cooperative Forest Fire Control program.

D12 - Discretion of Secretary based on project proposals and plans of work submitted by the State Extension directors for Extension Services in Disadvantaged Agricultural Areas with Special Needs.

D13 - Unassigned

D14 - Anticipated (projected) need for the Special Milk Program.

D15 - Unassigned

D16 - Discretion of the Administrator, with due consideration given to: (1) the population served, (2) the extent of the actual or potential air pollution problem, (3) the financial need of the respective agencies, and (4) the impact of the air pollution control activities upon implementation plan and national priorities.

D17 - Discretion of the Assistant Administrator for Coastal Zone Management based on demonstrated needs (for assistance in the development of a management program for the land and water resources of a State's coastal zone).

D18 - If the total allotment for Promotion of the Arts: Basic Grants to States exceeds the $200,000 minimum per eligible state, the amount of such excess which is no greater than 25% of the sums available to carry out this program for any fiscal year shall be available only to the Chairman for making grants to States or regional groups.

TABLE 2. DICTIONARY OF FORMULA ELEMENTS: EXPENDITURE

E1 - Unassigned

E2 - Cost of tuition and direct educational expenses in connection with the education and training of State and local highway department employees.

E3 - Funds apportioned to a State under Federal aid highway programs separately apportioned.

E4 - Estimated cost of completing the interstate system in each state. (Federal Share is 90% of the total cost, plus a percentage of the remaining cost in any State containing unappropriated and unreserved public lands and nontaxable Indian lands, exceeding 3% of the total area of the State, equal to the percentage that the area of such lands is of the total area, except that the Federal Share on any project shall not exceed 95% of the total cost.

E5 - Cost of construction under the Urban Mass Transportation, Basic Grant program.

E6 - Cost of operating expenses under the Urban Mass Transportation, Basic Grant program.

E7 - State funds expended or obligated for the State boating safety program during the previous fiscal year.

E8 - Expenditures based on costs to conduct pipeline safety programs: costs to include personnel, equipment, and activities reasonably required by the State agency to conduct its gas pipeline safety program.

E9 - Total expenditures for Sec. 314(a) and (b) of PHS Act.

E10 - Expenditures for Sec. 314(a) and (b) of PHS Act which were for cost containment.

E11 - Federal expenditures in the State under Titles V, XVIII, and XIV (of the Social Security Act) for hospitals and nursing home care.

E12 - Total expenditures from all sources for hospital and nursing home care in the state (determined by DHEW from the most recent data available).

E13 - Expenditures (open-end reimbursement): $600 per student per academic year for students enrolled in State Marine Schools.

E14 - Unassigned.

E15 - Civil defense personnel and administrative expenditures.

E16 - Manpower funds received by state in prior year.

E17 - Cost of proper and efficient administration of unemployment insurance law.

E18 - Sponsor area's proportion of funds allocated for the 1974 Summer Program for Economically Disadvantaged Youth, exclusive of recreation and transportation support program funds.

E19 - Budgeted local program expenditures less than or equal to minimum state allotments for the Historical Preservation program.

E20 - Local requests for matching federal funds to meet budgeted local program expenditures in excess of the minimum basic state grant for the Historical Preservation program.

E21 - The average per pupil expenditure for a State except in those cases where the average is less than 80% or more than 120% of the per pupil expenditure in the U. S., and for those States such percentages (i.e., 80% or 120%) shall be used to represent the average per pupil expenditure.

E22 - The average per pupil expenditures of all the educational agencies in the state in which the agency is located.

E23 - Non-federal expenditures for public elementary and secondary education.

E24 - Average per pupil cost of constructing minimum school facilities in the State in which the school district of the agency is located.

E25 - Local contribution rate (the quotient obtained by dividing the number of children in average daily attendance to whom the school district provided free public education into the total expenditures financed from revenues derived from local sources). The minimum rate may not be less than 50% of the average per pupil expenditure in the State or Nation, whichever is greater; nor more than the average per pupil expenditure in the State in which the district is located.

E26 - Amount determined to be the current expenditure per child necessary to provide free public education to the increased number of children in average daily attendance at schools operated by the LEA resulting from activities of the U. S. government.

E27 - The amount the Commissioner determines to be available from state, local, and federal sources (not sources such as payments under this chapter of funds from local sources necessary to provide education to other children) for current expenditure per child necessary to provide free public education to the increased number of children in average daily attendance resulting from activities of the U. S. government.

E28 - Per pupil expenditure defined as the aggregate current expenditures, during the second fiscal year preceding the fiscal year for which the computation is made, of all local education agencies in the state, plus any direct current expenditures by such state for the operation of such agencies (without regard for the sources of funds from which either of such expenditures are made), divided by the aggregate number of children who were in average daily enrollment for whom such agencies provided free public education during such preceding fiscal year.

E29 - $4.50 per diem for domiciliary care (not to exceed 1/2 cost of care) of eligible veterans of any war or service after January 31, 1955 receiving such care in a state home.

E30 - $6.00 per diem for nursing home care (not to exceed 1/2 cost of care of eligible veterans of any war or service after January 31, 1955 receiving such care in a state home.

E31 - $10.00 per diem for hospital care (not to exceed 1/2 cost of care) of eligible veterans of any war or service after January 31, 1955 receiving such care in a state home.

E32 - State and local performance as represented by expenditures for cooperative forest fire control.

E33 - Performance as indicated by state funds expended in excess of federal funds for the Cooperation in Forest Management and Processing program.

E34 - Federal program costs (this appears to be federal program costs connected to each state's program) for Youth Conservation Corps.

E35 - Cooperative research (costs) for two or more state agricultural experiment stations.

E36 - Unassigned

E37 - Unassigned

E38 - Non-federal funds expended for forestry research.

E39 - Expenditures for rural development research serving two or more States (10% of amount appropriated).

E40 - Unassigned

E41 - Unassigned

E42 - A national average breakfast payment (prescribed by the Secretary).

E43 - A national average free breakfast payment (prescribed by the Secretary).

E44 - A national average reduced price breakfast payment (prescribed by the Secretary).

E45 - A national average school lunch payment.

E46 - The special assistance factor for free lunches. Not less than 45¢ for FY 74--adjusted semi-annually to take into account changes in the series for food away from home of the CPI.

E47 - The special assistance factor for reduced price lunches. Set at a level of 10¢ less than the free lunch factor--adjusted with free lunch factor for changes in CPI.

E48 - Amount spent by each state the previous year for the Child Nutrition Programs: Special Milk Program.

E49 - Unassigned

E50 - Expected expenditures based on number of man-years required to establish, maintain and expand the State child nutrition programs for needy children, including the State's outreach effort. This amount shall be determined by the Food and Nutrition Service (FNS) on the basis of information available as to the salary level of state food service personnel.

E51 - State's program administrative costs for the Food Stamp Program.

E52 - Unassigned

E53 - Estimated costs of Waste Treatment Work construction as determined by Congress.

E54 - State costs for child care and supportive services for AFDC recipients.

E55 - Costs under State plan (for State and local personnel training for public assistance programs).

E56 - Total expenditures during that quarter for the provision of family planning services.

E57 - The total expenditures during that quarter for the provision of services (other than family planning services covered under E56) directed to five goals defined in the legislation: (1) achieving or maintaining economic self-support; (2) achieving or maintaining self-sufficiency; (3) preventing or remedying neglect, abuse or exploitation of children and adults unable to protect their own interests, or preserving, rehabilitating, or reuniting families; (4) preventing or reducing inappropriate institutional care or; (5) securing referral or admission for institutional care when other forms of care are not appropriate, including expenditures for administration (including planning and evaluation) and personnel training.

E58 - Medical assistance expenditures under the state Medicaid plan.

E59 - The sums expended during the quarter (as found necessary by the Secretary for the proper and efficient administration of the state Medicaid plan) as are attributable to compensation or training of skilled professional medical personnel, and staff directly supporting such personnel, of the State agency or any other public agency.

E60 - The sums expended during the quarter as are attributable to the design, development, or installation of mechanized claims processing and information retrieval systems as the Secretary determines are likely to provide more efficient, economical, and effective administration of the state medicaid plan.

E61 - The sums expended during the quarter as are attributable to the operation of the systems described above (E60) which are approved by the Secretary and include notification provisions as required in the Act.

E62 - Expenditures during the quarter (as found necessary by the Secretary for the proper and efficient administration of the State Medicaid plan) which are attributable to the compensation or training of personnel (of the state agency or any public agency) responsible for inspecting public or private institutions providing long-term care to recipients of medical assistance to determine whether such institutions comply with health or safety standards applicable to such institutions.

E63 - The sums expended during the quarter attributable to the offering, arranging, and furnishing of family planning services and supplies.

E64 - The remainder of the amounts expended during the quarter (after considering E59, E60, E61, E62 and E63) as found necessary by the Secretary for the proper and efficient administration of the State Medicaid plan. Expenditures for medical assistance for individuals aged 65 and over and disabled individuals entitled to hospital insurance which would not have been expended if such individuals had been enrolled in the hospital insurance program are not to be included in determining payments to states.

E65 - Unassigned

E66 - The first $18.00 of the average monthly payment to AFDC recipients.

E67 - The expenditures over $18.00 up to a maximum of $100.00 per AFDC recipient receiving foster care during month.

E68 - Expenditure during month over $18 up to a miaximum of $32 per AFDC recipient other than those receiving foster care.

E69 - Expenditures for family planning services provided to recipients of aid or other individual living in the same household whose needs are taken into account in making determinations of aid (or to those applying for or likely to apply for aid (or recent recipients).

E70 - Expenditures for the training (including both short- and long-term training at educational institutions through grants to such institutions or by direct financial assistance to students enrolled in such institutions) of personnel employed or preparing for employment by the state agency or local agency administering the plan in the political subdivision.

E71 - The remainder of expenditures for the administration of AFDC not covered by E69 and E70.

E72 - The total amount expended under the state plan during a quarter as emergency assistance to needy families with children.

E73 - Unassigned

E74 - Estimated cost of constructing the number of beds required to provide adequate care to war veterans in each state (not to exceed 2.5 beds per 1,000 veteran population in any state).

E75 - Total expenditures for AFDC recipients.

TABLE 3. DICTIONARY OF FORMULA ELEMENTS: INCOME

I1 - Per capita income.

I2 - Number of adults in low income families.

I3 - Total personal income.

I4 - Number of children aged 5 to 17 from families below poverty level in 1970 based on the "Orshansky" poverty index.

I5 - For eligible* LEA's (local education agencies), the number of children in a county who are: (1) in families having an annual income of $3,000 or less; or (2) in families receiving an annual income in excess of $3,000 from programs of AFDC under the State plan approved under Title IV of the Social Security Act; or (3) living in institutions for neglected or delinquent children or being supported in foster homes with public funds

*Eligible school districts must be located in a county in which: (A) the number of children described by I5 for the year amounts to at least 200% of the average number of children in all counties in the State; or (B) the number of children described by I5 in such county is 10,000 and amounts to 5% of the number of children in such county.

I6 - Aggregate personal income per school age child.

I7 - Rural per capita income.

I8 - Number of children aged 3 to 17 in families with incomes of less than $3,000 per annum.

I9 - Number of children aged 3 to 17 in families with incomes of less than $6,000 per annum.

I10 - Unassigned

I11 - Number of related children living with families with incomes below the poverty line.

TABLE 4. DICTIONARY OF FORMULA ELEMENTS: LAND

L1 - Total land area.

L2 - Unassigned

L3 - Acres of each state (including coastal and Great Lakes waters).

L4 - Total public land area.

L5 - Non-federal commercial forest land area.

L6 - "Croplands" and "Other Lands" as defined in the Conservation Needs Inventory" - 1967.

TABLE 5. DICTIONARY OF FORMULA ELEMENTS: POPULATION

P1 - Total population.

P2 - Rural population.

P3 - Urban population.

P4 - Population in municipalities and other urban places of 5,000 or more.

P5 - Population in urbanized area.

P6 - Population in urbanized area weighted by a factor of density, as determined by the Secretary.

P7 - Number of children under 21.

P8 - Number of children under 21 in rural areas.

P9 - Number of children under 21 in urban areas.

P10 - Coastal population.

P11 - Target area population (as defined by Department of Defense).

P12 - Support area population (as defined by Department of Defense).

P13 - Urban population of critical target areas (as defined by Department of Defense).

P14 - Population udner 18.

P15 - Unemployed population

P16 - Number of unemployed persons who reside in areas within the jurisdiction of each such applicant.

P17 - Number of unemployed residing in areas of substantial unemployment (equal to at least 6.5% for three consecutive months).

P18 - "Excess number" of unemployed persons who reside within the jurisdiction of the applicant. The term "excess number" means (1) the number which represents unemployed persons in excess of 4-1.2% of the labor force in the jurisdiction of the applicant in whose jurisdiction such persons reside, or (2) in the case of an applicant which is a State substantial number as above or the number which represents unemployed persons in excess of 4-1/2% of the labor force in areas eligible for assistance under Title II located in the geographical area served by such State prime sponsor under Title I or II, whichever is greater.

P19 - Number of persons covered by State unemployment insurance law.

P20 - Population classified as farmworkers used as formula components for FY 1976.

P21 - Number of people aged 55 and over.

P22 - Average number of individuals in the State who, during January last preceding the commencement of the fiscal year, are registered for manpower services, training, and unemployment as required (under the State plan requirements) to be eligible for AFDC payments.

P23 - Number of crewleaders (a crewleader is a farm labor contractor).

P24 - Number of adults who do not have a certificate of graduation from a school providing secondary education (or its equivalent) and who are not currently required to be enrolled in such school.

P25 - Number of children aged 3 to 21.

P26 - Number of children aged 5 to 17 from families receiving AFDC.

P27 - Number of children aged 5 to 17 living in institutions for neglected or delinquent children but not counted for a grant to a State agency under Section 123.

P28 - Aggregate number of children counted for the purposes of entitled local educational agencies under various programs.

P29 - Number of migratory children aged 5 to 17.

P30 - Number of minority children aged 5 to 17.

P31 - Population aged 15 to 19.

P32 - Population aged 20 to 24.

P33 - Population aged 25 to 65.

P34 - Population aged 15 to 20.

P35 - Population aged 18 to 58.

P36 - Population aged 5 to 17.

P37 - SMSA population.

P38 - Farm population.

P39 - Population in open country and towns of less than 10,000 outside urban areas.

P40 - Number of public assistance recipients.

P41 - Number of recipients of AFDC during month.

P42 - The number of AFDC recipients receiving foster care during month.

P43 - The number of all other AFDC recipients (i.e., those not receiving foster care) during month.

P44 - Population aged 60 and over.

P45 - Disability beneficiary recipients for preceding year.

TABLE 6. DICTIONARY OF FORMULA ELEMENTS: OTHER

R1 - Public road mileage.

R2 - Total mileage of rural delivery and intercity mail routes where service is performed by a motor vehicle.

R3 - Significant progress made in reducing traffic fatalities--based on the reduction in the rate of such fatalities per one hundred million vehicle miles during the calendar year preceding the fiscal year for which such incentive grants are authorized compared with the average annual rate of such fatalities for the four calendar years preceding such calendar year.

R4 - Bridge replacement need as determined by a federal-state inspection program and assignment of priorities for replacement.

R5 - Area and value of land owned by the U. S. within national forests therein.

R6 - Off-system road mileage.

R7 - Number of passengers enplaned at airports serviced by air carriers certified by the Civil Aeronautics Board.

R8 - Number of vessels numbered in a State under a numbering system approved under the State Boating Safety Program.

R9 - Miles of shoreline.

R10 - The average of the value of raw fish harvested by domestic commercial fishermen and received in the state for the three most recent calendar years for which satisfactory data are available.

R11 - The average of the value of manufactured and processed fishery merchandise manufactured in each state for the three most recent calendar years for which satisfactory data are available.

R12 - Grants made under Title I of the Public Works and Economic Development Act (grants for public works and development facilities) since August 26, 1965.

R13 - Number of persons holding paid licenses for sport or recreation.

R14 - Unassigned

R15 - Unassigned

R16 - Number of paid hunting license holders.

R17 - Unassigned

R18 - In lieu of tax payment--based on otherwise assessed valuation times the tax rate required to balance the budget. However, limited by amount the local education agency would have derived from such property and had available for current expenditure.

R19 - Amounts a local education agency would have received for FY 1967, if not yet received, based on lands transferred to Mexico.

R20 - Need as indicated by the number of small woodland owners and acres of commercial forest land.

R21 - Volume of timber cut.

R22 - Number of meals served under the nutritional standard school-lunch program and the school breakfast program during the preceding year.

R23 - Value of agricultural commodities and other foods to be delivered to States for food service programs under the nutritional standard school-lunch program.

R24 - Number of lunches served under the nutritional standard school-lunch program.

R25 - Number of breakfasts served to children in schools which participate in the school breakfast program.

R26 - Number of breakfasts served free to children eligible for free breakfasts under the school breakfast program.

R27 - Number of reduced price breakfasts served to children eligible for reduced price breakfasts under the school breakfast program.

R28 - Unassigned

R29 - Number of lunches served free to children eligible for such lunches under the nutritional standard school-lunch program.

R30 - Number of reduced price lunches served to children eligible for such lunches under the nutritional standard school-lunch program.

R31 - Number of live births.

R32 - Number of rural births.

R33 - Number of urban births.

R34 - Number of State and local governmental employees affected by the Intergovernmental Personnel Program: Grants for Strengthening State and Local Personnel Administration.

R35 - Extent of pollution problems for States is indicated by a count of pollution sources.

R36 - Need factor determined by the scope and extent of services to be provided under the State Developmental Disabilities: Basic Grants Plan.

TABLE 7. DICTIONARY OF FORMULA ELEMENTS: STUDENT

S1 - Number of children in attendance at State operated or State supported schools for handicapped children (including those in schools run under contract with the state agency).

S2 - Number of neglected and delinquent children at State operated or State supported schools for such children (including schools providing education for such children on a contract basis).

S3 - "Federally connected children"--the estimated increase, since the base year (the third or fourth regular school year preceding the fiscal year in which the application is filed), in the number of children residing on federal property and attending schools operated by the local education agency (LEA).

S4 - "Federally connected children"--the estimated increase in the number of children attending schools operated by the LEA since the base year (may not be later than the school year 1973-74), (A) residing with a parent employed on federal property, or (B) who had a parent who was on active duty in the uniformed services.

S5 - "Federally connected children"--the estimated increase, since the base year (may not be later than the school year 1973-74), in the number of children whose attendance at a school operated by the LEA results directly from activities of the United States government (carried on either directly or through a contractor).

S6 - Total number of children in average daily attendance at schools operated by the LEA residing on federal property and who (A) had a parent employed on federal property located in the same state as the school district, or (B) had a parent who was on active duty in the uniformed services (also to include Indian reservation children).

S7 - Total number of children in average daily attendance at schools operated by the LEA who reside on federal property and had a parent on active duty in the uniformed services (also to include Indian reservation children).

S8 - Number of children in average daily attendance at schools operated by the LEA who reside on federal property with a parent employed on federal property located within the same state as the school district.

S9 - Number of children in average daily attendance at schools operated by the LEA who had a parent on active duty in the uniformed services.

S10 - Number of children in average daily attendance at schools operated by the LEA who either reside on federal property or reside with a parent employed on federal property located in the same county as the school district.

S11 - Number of children in average daily attendance at schools operated by the LEA who reside with a parent employed on federal property located in the state but not in the county of the school district.

S12 - Number of children in average daily attendance at schools operated by the LEA residing with a parent who was, at any time during the three-year period preceding the beginning of the fiscal year for which the determination is made, a refugee (where such children constitute at least 20% of the total number of children in average daily attendance at the schools of a local agency).

S13 - Number of students in State Marine Schools.

S14 - Number of Indian children who were enrolled in the schools of the LEA applying for such funds and for whom such agency provided free education.

S15 - Number of public school pupils.

S16 - Number of students attending institutions of higher education.

S17 - Number of children in public and private elementary and secondary schools.

S18 - Number of children enrolled in schools without food service.

S19 - Number of handicapped children and children with specific learning disabilities who had a parent on active duty in the uniformed services, either residing on Federal property or off Federal property, for whom the local education agency provides for the educational and related needs of such children.

TABLE 8. DICTIONARY OF FORMULA ELEMENTS: FIXED/EQUAL AMOUNT

F - Equal amount distributed among states--that is, the formula specified an amount which each state must receive. Usually the formula provides for additional amounts of money to be distributed according to other formula elements.

TABLE 9. DICTIONARY OF FORMULA ELEMENTS: CONSTRAINTS

H - Prior funding level for recipients which determines the current minimum allotment ("hold-harmless").

M - Maximum amount for each recipient (sometimes specified as a dollar amount or sometimes as a maximum proportion of the total U.S. allotment).

N - Minimum amount (other than historical or hold-harmless)--not part of the formula; however, if formula yields an amount less than this sum, the minimum will be allocated rather than the formula derived amount.

SECTION 2-4. CATALOG OF FORMULA GRANT-IN-AID PROGRAMS: FORMULA BASED GRANTS AND THEIR CHARACTERISTICS, BY ADMINISTERING AGENCY

This section presents a catalog of formula based categorical grants-in-aid. Descriptions of 147 programs[1] are presented for grants in existence in FY 1975. Information presented in the catalog in Appendix (2-4): 1 includes:

- OMB Catalog #
- Program Title/Budget Subfunction
- Program Type and Recipient Jurisdiction
- Federal Share
- Approximate Program Magnitude ($)
- Formule Elements
- Formula Description/Algorithm

Program Type and Recipient Jurisdiction

Formula grants (F) allocate funds on the basis of factors set forth in legislation or administrative regulations, whereas formula-project grants (F/P) are project grants where potential recipients generally compete at the intrastate level for a share of formula-derived state area amounts. There are 111 formula grants (75%) and 36 formula-project grants (25%) identified in the following catalog of programs.

State governments are the primary recipients of all formula-based grants--with 107 (73%) grants going to states, 15 (10%) to state and local governments, 13 (9%) to local governments, and 12 (8%) to other governmental and non-governmental units. (See following Table (2-4): 1.)

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[1] ACIR identified 146 formula based programs. One additional program--DOL-02-17.232, Statewide Manpower Services (CETA-Title I)--has been included in the following catalog.

TABLE (2-4): 1. RECIPIENTS OF FORMULA BASED GRANTS[1]

	# of Programs		
Recipient	Formula	Formula-Project	Total
State	90	17	107
State/Local	9	6	15
Local	9	4	13
Other	3	9	12
Total	111	36	147

Percent Federal Share

About two-thirds of all formula based grants require local matching. Slightly more than half of these require a match of less than 75% (principally from 50-74%) and the remainder require a match of 75-90%. The vast majority of the one-third not requiring a match is accounted for by programs administered by the Office of Education (50%), the Department of Labor (20%), and the Department of Agriculture (10%). The majority of programs administered by the Office of Education (65%) and Department of Labor (85%) do not require a local match.

Program Size

Categorical grants-in-aid represent over 75% of all federal grant outlays--the remaining 25% is represented by block and general purpose grants. ACIR identifies 442 categorical programs, of which only one-third (146) were formula based grants. This one-third, however, accounts for over 80% of categorical funds.

The 147 formulas identified in this project were administered by 14 departments or agencies. Over 40% of these programs were administered by an office within the Department of Health, Education and Welfare, and these accounted for over half of all funds distributed. This information is summarized in the following Table (2-4): 2.

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[1] ACIR, Categorical Grants: Their Role and Design.

The vast majority (89%) of grant outlays is accounted for by 31 grant programs--which distributed $200 million or more in FY 1975. Nearly two-thirds of the amount distributed by these 31 programs is accounted for by 12 programs administered by SRS (43%) and DOT (20%). (See Table (2-4): 3.)

Formula Factors

Definitions of the various formula factors or elements used in grant-in-aid programs were reviewed in the preceding section (2-3), and a variety of elements were examined. These formula elements include population (P), income (I), expenditure (E), land (L), student (S), discretionary (D), other (R), and fixed (F) elements which determine basic grant-in-aid distributions. Table (2-4): 4, below (p. 56), summarizes the use of the formula elements, by agency--indicating both the number of times an element is used and the number of programs in which it is used. This multiple count depicts the use of a number of versions of the same element (e.g., population) in the same formula. The Office of Education, for example, had 39 formula or formula-project programs in 1975. Of these, 28 used a population measure. However, in the 28 programs, population was used 42 times, indicating extensive use of multiple measures of population in a single formula. This is frequently done where a program may reach several distinct target populations or where, within a single target population, subgroups may be considered to be of varying relative importance. Several Vocational Education programs, for example, use three measures of population: population 15-19, population 20-24, and population 25-65.

An examination of Table (2-4): 4 reveals that there is no discernible pattern of element use among federal agencies. The same formula element categories are used by a variety of agencies in distributing grant-in-aid funds. Differentials among agencies would most likely become apparent upon an examination of specific elements within overall factor categories.

The following catalog of formula based programs, Appendix (2-4): 1, references specific formula elements that are used in each formula. This classification of formula elements by program is further summarized in the next section (2-5) where specific programs are referenced to each formula element.

Formula Description/Algorithm

One of the most significant contributions of the research is the description and algebraic expression of individual grant-in-aid formulas.[1] This information was developed following a detailed review of ACIR working papers, program legislation, OMB Catalog, etc., and is subject to further review and confirmation by appropriate administering agency staff.

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[1] With the exception of the Medicaid and AFDC matching formulas, variable match rate formulas have not been expressed algebraically in the following catalog.

TABLE (2-4): 2. DEPARTMENTAL/AGENCY SUMMARY OF FORMULA GRANT-IN-AID OUTLAYS--FY 75

	No. of Programs	Estimated Outlay ($ mil.)
Department of Agriculture	20	2,612
Department of Commerce	5	32
Department of Defense	2	35
Department of Health, Education and Welfare	61	19,540
Office of Education	(39)	(3,625)
Office of Human Development	(9)	(1,495)
Public Health Service	(6)	(380)
Social and Rehabilitation Service	(7)	(14,040)
Department of Interior	7	260
Department of Justice	3	10
Department of Labor	12	4,101[a]
Department of Transportation	26	7,286
Civil Service Commission	1	15
Community Services Administration	1	350
Environmental Protection Agency	3	2,045
National Foundation for the Arts and Humanities	1	15
Veterans Administration	4	30
Water Resources Council	1	3
Total	147	36,334[b]
Department of Treasury-Office of Revenue Sharing		6,200[c]
		42,534

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[a] Includes CETA program.

[b] Includes all programs in catalog (147 formula and formula-project grants). Dollar estimates were not made for a small number of these programs, and some of the estimates may be incorrect; however, overall the dollar estimates seem reasonable.

[c] Not included in catalog.

TABLE (2-4): 3. SUMMARY OF LARGEST FORMULA GRANT-IN-AID PROGRAMS
(DISTRIBUTING $200 MIL. OR MORE--FY 75)

CGR Typology ID #	OMB Cat. #	Program Title	Type & Recip.	% Fed. Share	FY 75 $ Amt. (mil.)
AGR-12	10.550	Child Nutrition Programs: Commodity Distribution Differential Payments	F S	100	430
AGR-15	10.555	Child Nutrition Programs: School Lunch Food Assistance Programs	F S	25	465
AGR-16	99.999	Child Nutrition Programs: Special Assistance for Free and Reduced-Price School Lunches	F S		820
CSA-01	49.002	Community Action: Community Action Agency Grants	F/P G/O	80	350
OE-03	13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies	F L	100	1,565
OE-12	13.478	Federally Affected Areas: Payments to Compensate for Federally Owned Property	F L	100	635
OE-14	13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies	F L	100	
OE-15	13.478	Federally Affected Public Schools: Payments Due to Sudden and Substantial Increases in Attendance	F L	100	
OE-28	13.493	Vocational Education: State Vocational Education Programs, Basic Grants	F S	50	430
EPA-03	66.418	Water Pollution Prevention and Control: Waste Treatment Works Construction	F/P S/L	75	1,940
OHD-01	13.600	Headstart Program: Program Grants	F/P G/O	80	440
OHD-08	13.624	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilitation Services: Basic Grants to States	F S	80/50-67	680
DOL-01	17.232	Comprehensive Manpower Services: Grants to State Prime Sponsors (CETA-Title I)	F S	100	1,270
DOL-05	17.232	Emergency Public Service Jobs Program (CETA-Title VI)	F S/L	100	875
DOL-06	17.225	Grants to States for Unemployment Compensation Administration	F/P S	100	655
DOL-08	17.232	Manpower Services: Youth Programs and Other Special Programs: Summer Youth Programs (CETA-Title III)	F S/L	100	200
DOL-10	17.232	Public Service Employment Program (CETA-Title II)	F S/L	100	670
DOL-11	17.226	Work Incentive Program for Recipients of Aid to Families with Dependent Children: Basic Grants for Employment Purposes	F S	90	210
PHS-03	13.232	Maternal & Child Health & Crippled Children's Services: Maternal & Child Health Services: Basic Grants	F S	50	200
SRS-04	13.771 13.772	Social Services: Providing Services & Personnel Training	F S	75/90	1,995
SRS-05	13.714	Medical Assistance Programs (Medicaid)	F S	50-83	6,740

Table (2-4): 3 (Continued)

Typology ID #	OMB Cat. #	Program Title	Type & Recip.	% Fed. Share	FY 75 $ Amt. (mil.)
SRS-06	13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients	F S	50-65	4,585
SRS-07	13.761	Aid to Families with Dependent Children: Grants for Program Administration	F S	50/75	530
DOT-11	99.999	Highways: Federal-Aid Primary and Secondary Systems Extensions in Urban Areas	F S	70	290
DOT-12	99.999	Highways: Federal-Aid Primary Systems in Rural Areas	F S	70	780
DOT-13	99.999	Highways: Federal-Aid Secondary System in Rural Areas	F S	70	430
DOT-14	99.999	Highways: Federal-Aid Urban Systems	F S	70	1,300
DOT-16	20.205	Highways: Interstate System	F S	90	2,900
DOT-17	99.999	Highways: Priority Primary Routes	F S	70	290
DOT-22	20.507	Urban Mass Transportation: Basic Grants	F L	50/80	300
DOT-23	20.102	Airport and Airway Development: Certified Air Carrier and Reliever Airports	F/P S/L	(50:75)/ 82	275
		TOTAL			$32,250

TABLE (2-4): 4. FORMULA ELEMENTS USED IN FORMULA GRANT-IN-AID PROGRAMS—FY 75, BY AGENCY[1]

Agency or Office	# of Programs	P-Population	I-Income	R-Other	S-Students	D-Discretion	E-Expenditures	L-Land	F-Fixed Amount	M-Minimum	H-Hold Harmless	M-Maximum	Programs Using M, H, or M
1. Dept. of Agriculture	20	10/7	4/4	11/7	1/1	4/4	15/12	3/3	4	4	4	2	8
2. Civil Service Commission	1	1/1		1/1		1/1				1		1	1
3. Dept. of Commerce	5	1/1		4/3	1/1	1/1	2/2		1	1		2	2
4. Community Services Administration	1	2/1	1/1								1		1
5. Dept. of Defense	2	4/2					1/1		1				0
6. Office of Education	39	42/28	10/10	2/2	17/9	2/2	11/10		23	3	8	4	14
7. Environmental Protection Agency	3			1/1		1/1	1/1				1	1	2
8. Office of Human Development	9	9/9	3/3	1/1					1	6	3		7
9. Dept. of Interior	7	3/2		2/2			4/2	2/2	5	3		7	7
10. Dept. of Justice	3	3/3				2/2			1	1			1
11. Dept. of Labor	12	15/12	5/5			5/5	6/6		1	1	1		2
12. National Foundation for the Arts and Humanities	1					1/1			1				0
13. Public Health Service	6	6/4	5/5	3/1			4/1		2	3	2		5
14. Social and Rehabilitation Service	7	4/2	3/3				19/6		1			1	1
15. Dept. of Transportation	26	19/15		14/14		4/4	8/7	7/7	1	9		4	13
16. Veterans Administration	4						4/4						0
17. Water Resources Council	1	1/1	1/1			1/1		1/1					0
TOTAL	147	120/88	32/32	39/32	19/11	22/22	77/52	13/13	42	32	20	22	64

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[1] In the formula element columns the number above the slash indicates the number of times the element is used in formulas and the number below the slash indicates the number of formulas using the element.

APPENDIX (2-4): 1. CATALOG OF FORMULA GRANT-IN-AID PROGRAMS (FY 75, BY AGENCY)

Table	Administering Agency	Page
1	DEPARTMENT OF AGRICULTURE	59
2	CIVIL SERVICE COMMISSION	62
3	DEPARTMENT OF COMMERCE	63
4	COMMUNITY SERVICES ADMINISTRATION	64
5	DEPARTMENT OF DEFENSE	65
6	OFFICE OF EDUCATION-DHEW	66
7	ENVIRONMENTAL PROTECTION AGENCY	72
8	OFFICE OF HUMAN DEVELOPMENT-DHEW	73
9	DEPARTMENT OF INTERIOR	75
10	DEPARTMENT OF JUSTICE	77
11	DEPARTMENT OF LABOR	78
12	NATIONAL FOUNDATION FOR THE ARTS AND HUMANITIES	80
13	PUBLIC HEALTH SERVICE-DHEW	81
14	SOCIAL AND REHABILITATION SERVICES-DHEW	83
15	DEPARTMENT OF TRANSPORTATION	85
16	VETERANS ADMINISTRATION	89
17	WATER RESOURCES COUNCIL	90

Note: Above tables are ordered in alphabetical sequence--by function.

EXPLANATION OF CATALOG NOTATION

Agency Key

AGR	Department of Agriculture
CSC	Civil Service Commission
COM	Department of Commerce
CSA	Community Services Administration
DOD	Department of Defense
OE	Office of Education-DHEW
EPA	Environmental Protection Agency
OHD	Office of Human Development-DHEW
INT	Department of Interior
DOJ	Department of Justice
DOL	Department of Labor
NFAH	National Foundation for the Arts and Humanities
PHS	Public Health Services-DHEW
SRS	Social and Rehabilitation Service-DHEW
DOT	Department of Transportation
VA	Veterans Administration
WRC	Water Resources Council

ID

Programs within administering agencies have been numbered consecutively. References to specific programs in this text use the agency abbreviation, ID #, OMB Catalog # (e.g., AGR-01-10.656).

OMB Catalog

The Office of Management and Budget issues an annual Catalog of federal aid programs. The OMB Catalog number has been added to our ID number in order to facilitate the user's ability to cross-reference other sources. Where several programs are included in one OMB program listing, the separate programs will have the same OMB catalog number. The number 99.999 was used for those few programs not contained or readily identifiable in the OMB Catalog.

Program Title/Budget Subfunction

Numbered and underlined headings indicate budget subfunctions. The U.S. Executive Budget lists programs by these subfunctions which cut across agencies (e.g., the budget subfunction 604 Public Assistance and Other Income Supplements includes the Department of Agriculture Child Nutrition Programs and the Social and Rehabilitative Services' AFDC programs). Program titles are as listed by ACIR in their Catalog.

Type and Recipient

Type of Program is the ACIR classification:

F - formula program
F/P - formula-project program

Recipient jurisdictions are abbreviated as follows:

S - state government
L - local government
S/L - state and local government
G/O - governmental and others

% Federal Share

Indicates the federal matching share. If this is 100% then no local match is required.

The ACIR Catalog matching notations have been used here and are as follows:

33-67	dash indicates match is variable over the stated range
80,30	comma indicates federal percentage declines over time from the first percentage to the second
51/75	slash indicates federal share is different for different types of activities
50:75	colon indicates federal share is different for different types of recipients
CS	federal share is less than 100%, but is not specified; it may be negotiable
S	supplemental grant; federal funds used to increase federal share in other projects
X	federal payment is a fixed sum per unit of recipient service output

Approximate $ Amount

Indicates a best estimate of the actual FY 1975 federal allocations for the program (in millions of dollars).

Formula Factors (Elements)

General categories are as follows:

Distributional Elements--	D	Discretionary
	E	Expenditure
	I	Income
	L	Land
	P	Population
	R	Other
	S	Student
	F	Fixed
Constraints--	H	Historical or Hold Harmless
	M	Maximum
	N	Minimum

Formula Description/Algorithm

A narrative summarizing the formula is provided. The following notations are used in the formula algorithms:

A_{us} - U.S. total allocation
A_i - allocation of state i
n - total number of states receiving a program allocation

Other formula elements are subscripted with the "us" or "i" designation as appropriate.

Generally, fixed or equal amounts of money (F) will be indicated as part of the formula, whereas minima (N), maxima (M), and historical or hold harmless amounts (H) will be indicated below the formula algorithm.

TABLE 1. DEPARTMENT OF AGRICULTURE (AGR): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		302 Conservation and Land Management					
01	10.656	Cooperative Forest Fire Control	F S	50	25	D11, E32	Formula based on extent of fire protection job and state and local performance as represented by expenditures.
02	10.657	Forest Management, Production, and Protection: Cooperation with States	F S	50	5	R20, E33	Formula based on need as measured by the number of small woodland owners and acres of commercial forest land, and performance as measured by state funds expended in excess of federal funds.
03	10.661	Youth Conservation Corps: Projects for Employment of Youth on Non-Federal Public Lands	F/P S	80	5	N, L4, P1, E34	State share (for projects) is based on total population (80%) and public land area (20%); the federal YCC program in each state is deducted from this amount--the remainder is the state program amount. $A_i = (.8\,A_{us})\,\frac{P1_i}{P1_{us}} + (.2\,A_{us})\,\frac{L4_i}{L4_{us}} - E34_i$ $N = \$40{,}000$
		352 Agricultural Research and Services					
04	10.203	Agricultural Experiment Stations: Support Grants	F S	50	75	F, P2, P38, N, E35,	Base amount each year is 1955 allocation, remainder is distributed: 20% equally among states, 52% according to rural and farm population, 25% for cooperative research stations, and 3% is reserved for federal administrative costs. $A_i = H_i + .2\,\frac{(A_{us} - N_{us})}{n} + [\,.52\,(A_{us} - N_{us})\,(.5\,\frac{P2_i}{P2_{us}} + .5\,\frac{P38_i}{P38_{us}})] +$ $.25\,(A_{us} - N_{us})\,\frac{E35_i}{E35_{us}}$ H_i = 1955 appropriation
05	10.500	Cooperative Agricultural Extension Work	F S	50	180	N, P2, P38, F	Base amount each year is 1962 allocation, remainder is distributed: 20% equally among states, 40% in proportion to rural population, 40% in proportion to farm population. $A_i = H_i + .2\,\frac{(A_{us} - N_{us})}{n} + .4\,(A_{us} - N_{us})\,\frac{P2_i}{P2_{us}} + .4\,(A_{us} - N_{us})\,\frac{P38_i}{P38_{us}}$ H_i = 1962 appropriation (Note: 4% of appropriations used for Federal Extension Service.)
06	10.500	Extension Services in Disadvantaged Agricultural Extension Areas with Special Needs	F/P S	50	20	N, D12	Payments made to states on basis of special needs in such areas as determined by the Secretary--using project proposals and work plans submitted by the State Extension directors as a basis for allocations. $A_i = D12_i$ $N = .1\,A_{us}$

Table 1: AGR (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
07	10.202	Promoting Research in Forestry	F S	50	5	L5, R21, E38	Allocations based on non-federal commercial forest land area, volume of timber cut, and non-federal funds expended.
08	10.204	Rural Development and Small Farm Research	F S	100	2	E39, F, P2, P38	Appropriations are distributed: 20% equally among states, 33% based on farm population, 33% based on rural population, 10% reserved for allocation to states to finance work serving two or more states, and 4% reserved for federal administration. $A_i = .2 \frac{A_{us}}{n} + .33\ A_{us} \frac{P2_i}{P2_{us}} + .33\ A_{us} \frac{P38_i}{P38_{us}} + .1\ A_{us} \frac{E39_i}{E39_{us}}$
09	10.418	451 Community Development Water and Waste Disposal Systems for Rural Areas	F/P G/O	50	35	F, P39, I7	10% of program funds reserved for federal administration, fixed amount to each state, remainder is distributed: .67 on basis of U.S. population in open country and towns of less than 10,000 outside urban areas, and .33 based on rural per capita income. $A_i = \$20{,}000 + .67\ (A_{us} - .10\ A_{us} - 20{,}000n)\ \frac{P39_i}{P39_{us}} + .33\ (A_{us} - .10\ A_{us} - 20{,}000n)\ \frac{I7_{us}}{I7_i}$
10	10.662	452 Area and Regional Development Rural Community Fire Protection	F/P S	50	5	L6, P39	5% reserved for federal administration, remainder distributed: 50% on basis of croplands and other lands, and 50% on population in open country and towns of less than 10,000 outside urban areas. $A_i = .5\ (.95\ A_{us})\ \frac{P39_i}{P39_{us}} + .5\ (.95A_{us})\ \frac{L6_i}{L6_{us}}$
11	10.424	Rural Industrialization Assistance Grants for Development of Private Business	F/P S/L	100	15	P2, I7	Funds are allocated to state based on rural population and income.
12	10.550	604 Public Assistance and Other Income Supplements Child Nutrition Programs: Commodity Distribution Differential Payments	F S	100	430	R22, R23, N	Agricultural commodities and other foods are distributed among states and schools and service institutions participating in food service programs in accordance with the needs as determined by the local school and service institution authorities. The value of such commodities is estimated as of February 15 of each year--if the value is less than 90% of that initially programmed for that year, the Secretary is to pay state education agencies an amount of funds equal to the difference in value. This amount is to be distributed among the states based on the number of meals served under the nutritional standard lunch program and the school breakfast program during the preceding year. (N = The national average of donated foods, or cash payments in lieu thereof, shall not be less than 10¢ per lunch in 1975, and that amount shall be adjusted annually thereafter to reflect changes in the Consumer Price Index for food away from home.)

Table 1: AGR (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factor	Formula Description/Algorithm
13	10.554	Child Nutrition Programs: Non-Food Assistance	F G/O	75	25	S18, R24	Distributed on basis of number of children enrolled in schools without food services (50%), and on the basis of the number of lunches served (50%). $A_i = .5\ A_{us} \frac{S18_i}{S18_{us}} + .5\ A_{us} \frac{R24_i}{R24_{us}}$
14	10.553	Child Nutrition Programs: School Breakfast Program	F G/O	x^{12}	85	R25, E42, R26, E43, R27, E44, H	Payments to states based on the average cost of breakfasts served to children in schools which participate in the program, the average cost of such breakfasts served free to children eligible for free breakfasts, and the average cost of reduced price breakfasts served to children eligible for reduced-price breakfasts multiplied by the number of such meals served. (Average breakfast payments prescribed by Secretary.) $A_i = R25_i\ (E42) + R26_i\ (E43) + R27_i\ (E44)$ H = 1972 allotment
15	10.555	Child Nutrition Programs: School Lunch Food Assistance Programs	F S	25^{13}	465	R24, E45, M, H	Payments to states based on number of lunches served multiplied by national average payment. $A_i = R24_i\ (E45)$ $M = E_{45} \geq \$.10$ H = 1972 allotment
16	99.999	Child Nutrition Programs: Special Assistance for Free and Reduced-Price School Lunches	F S	x^{12}	820	R29, E46, R30, E47, M	Payments to states based on the number of lunches served and price factor for free lunches, and the number of lunches served and price factor for reduced-price lunches. $A_i = R29_i\ (E46) + R30_i\ (E47)$ M = Established by Secretary, but not less than \$.60 per lunch.
17	10.552	Child Nutrition Programs: Special Food Service for Children in Service Institutions	F S	100	95	I8, D3	Each state receives a basic amount as determined by the Secretary (but no more than \$50,000), plus a portion of the remainder based on the number of children aged 3-17 in low income families. $A_i = D3_i + (A_{us} - D3_{us}) \frac{I8_i}{I8_{us}}$ $D3_i \leq 50{,}000$
18	10.556	Child Nutrition Programs: Special Milk Program	F G/O	x^{12}	125	E48, D14, M	Distribution based on expenditures for milk in previous year (60%), on anticipated need (39%), and 1% reserved for unforeseen contingencies. $A_i = .6\ A_{us} \frac{E48_i}{E48_{us}} + .39A_{us} \frac{D14_i}{D14_{us}}$ M = \$.05 per half pint of milk served
19	99.999	Child Nutrition Programs: State Administrative Expenses	F S	100	5	I9, E50	Allocation based on state plans--basic amount related to man-years required for program efforts for needy children, remainder allocated on basis of number of children aged 3-17 in low income families.
20	99.999	Food Stamp Program: Administrative Costs	F S	50	190	E51	Each state is paid an amount equal to 50% of all administrative costs. $A_i = .5\ E51$

TABLE 2. CIVIL SERVICE COMMISSION (CSC): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithms
		806 Other General Government					
01	27.012	Intergovernmental Personnel Program: Basic Grants for Strengthening State and Local Personnel Administration	F/P S/L	50	15	P1, H, M, R34 D	The Commission allocates 80% of the total amount available for grants under the chapter among states on a weighted formula taking into consideration such factors as the size of population and the number of state and local government employees affected. The remaining funds are used in a discretionary fund for grants for special projects. H = $70,000 M = 12.5% of the total apportionment for all states

TABLE 3. DEPARTMENT OF COMMERCE (COM): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		302 Conservation and Land Management					
01	11.418	Coastal Zone Management: Development of Management Program	F S	67	10	P10, R9, D17, F	Each coastal state receives 1% of funds available, remainder allocated on basis of shoreline (40%), coastal population (40%), and at the discretion of the Secretary based on demonstrated need (20%). $A_i = .01\ A_{us} + .99\ A_{us}\ (.4 \frac{R9_i}{R9_{us}} + .4 \frac{P10_i}{P10_{us}} + .2\ D17_i)$
		306 Other Natural Resources					
02	11.407	Commercial Fisheries: Research and Development Basic Grants	F/P S	75	5	R10, R11, N, M	Apportionment based on proportion of the value of raw fish harvested and the value of manufactured and processed fishery merchandise. $A_i = (\frac{R10_i + R11_i}{R10_{us} + R11_{us}})\ A_{us}$ $N - .5\%\ A_{us}$ $M - 6\%\ A_{us}$
		406 Water Transportation					
03	11.506	State Marine Schools: Annual Payments	F S	50	1	M, E	State payments to maritime academy or college will be equally matched, up to maximum amount per year. M = $75,000 if out-of-state students are accepted. M = $25,000 if out-of-state students are not accepted.
04	11.506	State Marine Schools: Student Subsistence Payments	F S	x[3]	1	E13, S13	Payments to academies or students may be made at a rate not in excess of $600 per academic year per student. $A_i = S13_i\ (E13_i)$
		452 Area and Regional Development					
05	11.308	Public Works and Economic Development: Supplemental and Basic Grants	F/P G/O	75	15	R12	Apportionment among states based on proportion of past grants for public works and development facilities. $A_i = (\frac{R12_i}{R12_{us}})\ A_{us}$

TABLE 4. COMMUNITY SERVICES ADMINISTRATION (CSA): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		451 Community Development					
01	49.002	Community Action: Community Action Agency Grants	F/P G/O	80[4]	350	H, P40, P15, I11	Allocation based on public assistance recipients (33%), number of unemployed (33%), and number of children in low income families (33%). $A_i = \frac{P15_i}{P15_{us}} (.33\ A_{us}) + \frac{P40_i}{P40_{us}} (.33\ A_{us}) + \frac{I11_i}{I11_{us}} (.33\ A_{us})$ H = 1973 amount received

TABLE 5. DEPARTMENT OF DEFENSE (DOD): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		051 Department of Defense-Military					
01	12.315	Civil Defense: Contributions to States for Personnel and Administrative Expenses	F S	50	30	P1, P11, P12, E15, F	Each state is provided a basic amount, plus a portion of the amount remaining based on the proportion of target area population (1/3), support area population (2/9), civil defense personnel and administrative expenditures (1/3), and total population (1/9). $A_i = F + 1/3\ (A_{us} - Fn) \frac{P11_i}{P11_{us}} + 2/9\ (A_{us} - Fn) \frac{P12_i}{P12_{us}} + 1/3\ (A_{us} - Fn) \frac{E15_i}{E15_{us}} + 1/9\ (A_{us} - Fn) \frac{P1_i}{P1_{us}}$
02	12.305	Civil Defense: Shelters and Other Protective Facilities	F/P S/L	50	5	P13	State amount based on proportion of urban population of critical target areas. $A_i = A_{us}\ (\frac{P13_i}{P13_{us}})$

TABLE 6. OFFICE OF EDUCATION (OE) DHEW: FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		501 Elementary, Secondary and Vocational Education					
01	13.400	Adult Education: Basic Grants	F S	90	65	F, M, P24	Each state receives a fixed allotment, plus a portion of the remainder based on the number of adults who are not high school graduates (and are not required to be enrolled in secondary school). $A_i = \$150,000 + (A_{us} - 150,000n) \frac{P24_i}{P24_{us}}$ M = 90% 1973 allotment
02	13.449	Education of the Handicapped: Basic Grants	F S/L	100	100	M, P25	States are entitled to a maximum amount which is based on the number of children aged 3-21 multiplied by $8.75. From the amount appropriated for the program, each state receives an amount equal to its 1974 allotment. After this allocation, amounts remaining are allocated in proportion to unsatisfied entitlements remaining for each state. $A_i = H_i + [(A_{us} - H_{us}) \frac{M_i - H_i}{M_{us} - H_{us}}]$ M = $8.75 (P25) H = 1974 allotment
03	13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies	F L	100	1,565	I4, P26, P27, E21, D9, M	Entitlements determined by multiplying the number of children to be counted according to criteria established in legislation (i.e., children 5-17 in families below poverty level, 2/3 of children 5-17 in families above poverty level receiving AFDC, and children in institutions for neglected or delinquent children) by 40% of the average per pupil expenditure in the State. $A_i = .4\ E21_i\ (I4_i + .67\ P26_i + P27_i) + D9$ M = 85% previous year's allotment Note: If $E21_i \leq 80\%\ E21_{us}$, then $E21_i = 80\%\ E21_{us}$ If $E21_i \geq 120\%\ E21_{us}$, then $E21_i = 120\%\ E21_{us}$
04	13.511	Educationally Deprived Children: Special Grants	F L	100	35	I5, E22, M	Entitlements to local educational agencies are based on the number of children counted for purposes of programs of aid for educationally deprived children multiplied by 50% of the average per pupil expenditures of LEAs within state. $A_i = .5\ E22_i\ (I5_i)$ $M = .12A_{us}$ and $A_{us} \leq \$75,000,000$
05	13.512	Educationally Deprived Children: Special Incentive Grants	F L	100	15	E23, I3, P28, M	For each .01 percent by which the effort index of the state exceeds the national index, the state receives $1 per child counted for purposes of programs of aid for educationally deprived children. Where $\frac{E23_i}{I3_i} > \frac{E23_{us}}{I3_{us}}$: $A_i = \$1.00[(\frac{\frac{E23_i}{I23_i} - \frac{E23_{us}}{I3_{us}}}{\frac{E23_{us}}{I3_{us}}}) \div .0001]\ P28_i$ $M = 15\%\ A_{us}$

Table 6: OE (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
06	13.427	Educationally Deprived Children: State Operated Programs: Handicapped Children	F S	100	90	S1, E21, H	Entitlements determined by multiplying the number of children in attendance at schools for handicapped children operated or supported by the State agency by 40% of the average per pupil expenditure in the State. $A_i = S1_i\ (.4\ E21_i)$ H = Previous year's allotment Note: If $E21_i \leq 80\%\ E21_{us}$, then $E21_i = 80\%\ E21_{us}$ If $E21_i \geq 120\%\ E21_{us}$, then $E21_i = 120\%\ E21_{us}$
07	13.429	Educationally Deprived Children: State Operated Programs: Migratory Children	F S	100	90	P29, E21, H	Entitlements determined by multiplying the number of migratory children aged 5-17 who reside in the State by 40% of average per pupil expenditure in the State. $A_i = P29_i\ (.4\ E21_i)$ H = Previous year's allotment Note: If $E21_i \leq 80\%\ E21_{us}$, then $E21_i = 80\%\ E21_{us}$ If $E21_i \geq 120\%\ E21_{us}$, then $E21_i = 120\%\ E21_{us}$
08	13.431	Educationally Deprived Children: State Operated Programs: Neglected or Delinquent Children	F S	100	25	S2, E21, H	Entitlements determined by multiplying the number of neglected and delinquent children in schools operated by the State for such children by 40% of the average per pupil expenditure in the State. $A_i = S2_i\ (.4\ E21_i)$ H = Previous year's allotment Note: If $E21_i \leq 80\%\ E21_{us}$, then $E21_i = 80\%\ E21_{us}$ If $E21_i \geq 120\%\ E21_{us}$, then $E21_i = 120\%\ E21_{us}$
09	13.525	Emergency School Aid: Basic Grants to Local Education Agencies	F/P L	100	135	F, H, P30	Each State is apportioned a fixed amount, plus a portion of the remainder based on the proportion of minority group children aged 5-17. $A_i = \$75{,}000 + (A_{us} - 75{,}000n)\ \frac{P30_i}{P30_{us}}$ H = $100,000
10	13.526	Emergency School Aid: Pilot Programs or Projects	F/P L	100	35	F, P30	Each State is apportioned a fixed amount, plus a portion of the remainder based on the proportion of minority group children aged 5-17. $A_i = \$75{,}000 + (A_{us} - 75{,}000n)\ \frac{P30_i}{P30_{us}}$
11	13.529	Emergency School Aid: Special Programs and Project Grants to Non-Profit Organizations	F/P G/O	100	20	F, H, P30	Each State is apportioned a fixed amount, plus a portion of the remainder based on the proportion of minority group children aged 5-17. $A_i = \$75{,}000 + (A_{us} - 75{,}000n)\ \frac{P30_i}{P30_{us}}$ H = $100,000
12	13.478	Federally Affected Areas: Payments to Compensate for Federally Owned Property	F L	100	635[a]	R18	Payments based on otherwise assessed valuation times the tax rate required to balance the budget. $A_i = R18_i$

Table 6: OE (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
13	13.477	Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activities	F L	100	20	S3, E24, S4, S5, E19, D10	Amount for each LEA based on increase in number of federally connected children (by category) multiplied by the applicable percentage of per pupil cost of constructing minimum facilities which is paid for that type of child. To be able to receive any amount for categories S3, S4, or S5, the increase referred to must be at least 20%, and in the case of S3 or S4 be equal to at least 1,500 or 10% of the average number of children in attendance and in the case of S5 be equal to at least 2,000 or 10% of average attendance. $A_i = .95\ E24_i\ (S3_i) + .50\ E24_i\ (S4_i) + .45\ E24_i\ (S5_i) + E19_i + D10_i$
14	13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies	F L	100	635^a	S6, S7, S8, S9, S10, S11, S12, E25, N, M, F	Federally affected public schools are entitled to an amount of money which is determined by the number of federally connected children (by category) multiplied by the applicable percentage of the local contribution rate which is determined for that type of child. The minimum allotment to an LEA is 25% of its entitlement as determined under each category. Remaining sums are allocated to bring amounts up to various levels of entitlement under each category attributable to the children. Any other sums remaining after these levels are met are allocated according to any unsatisfied entitlements. Entitlements for LEAs where S6 ≥ 25% of total number of children in average daily attendance: $A_i = S6\ (E25_i) + S9\ (.5\ E25_i) + S10\ (.45\ E25_i) + S11\ (.4\ E25_i)$ Entitlements for other LEAs: $A_i = S7\ (E25_i) + S8\ (.9\ E25_i) + S9\ (.3\ E25_i) + S10\ (.45\ E25_i) + S11\ (.4\ E25_i)$ M = 25% of entitlement as determined under each category
15	13.478	Federally Affected Public Schools: Payments Due to Sudden and Substantial Increases in Attendance	F L	100	635^a	S5, E26, E27	Affected agencies entitled to receive an amount based on the number of children determined to be the increase from activities of the U. S. in average daily attendance, multiplied by the amount determined to be the current necessary expenditure per child, minus the amount the Commissioner determines available from other sources. $A_i = S5_i\ (E26_i - E27_i)$
16	13.534	Indian Education: Grants to Local Education Agencies	F L	100	25	S14, E28	LEAs are entitled to a grant equal to the average per pupil expenditure for such agency multiplied by the number of Indian children enrolled in school. $A_i = S14_i\ (E28_i)$
17	13.486	Strengthening State and Local Education Agencies: Basic Grants to States	F S	100	35	F, S15	Portion reserved for project grants and territories, remainder apportioned 40% equally among states, and 60% among the states in proportion to number of public school pupils. $A_i = \frac{.4\ (.94\ A_{us})}{n} + .6\ (.94\ A_{us})\ \frac{S15_i}{S15_{us}}$ Note: $.05\ A_{us}$ reserved for project grants $.01\ A_{us}$ reserved for territories

Table 6: OE (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
18	13.542	Strengthening State and Local Education Agencies: Comprehensive Educational Planning and Evaluation	F S/L	75	?	F, P1	Portion reserved, remainder apportioned 40% equally among states, and 60% among states in proportion to total population. $A_i = \frac{.4\ (.99\ A_{us})}{n} + .6\ (.99\ A_{us})\ \frac{P1_i}{P1_{us}}$ Note: $.01\ A_{us}$ reserved
19	13.519	Supplementary Education Centers and Services: Guidance, Counseling, and Testing	F S/L	100	105	F, P1, P36	Each State is apportioned a fixed amount, and the remainder is apportioned one-half on the basis of children 5-17 and one-half on the basis of population. $A_i = \$200{,}000 + .5\ (A_{us} - 200{,}000n)\ \frac{P1_i}{P1_{us}} + .5\ (A_{us} - 200{,}000n)\ \frac{P36_i}{P36_{us}}$
20	13.494	Vocational Education: Consumer and Homemaking Education	F S	50:90	30	M, P31, P32, P33, I1	Allotments based on population age groups and the per capita income allotment ratio of each state: 50% based on population 15-19, 20% on population aged 20-24, 15% on population 25-65, and 15% on the sum of allotments created above $A_i = W_i + X_i + Y_i + Z_i$ where: $W_i = .5\ A_{us}\ [P31_i\ (1 - .5\ \frac{I1_i}{I1_{us}}) + \sum_{i=1}^{n} P31_i\ (1 - .5\ \frac{I1_i}{I1_{us}})]$ $X_i = .2\ A_{us}\ [P32_i\ (1 - .5\ \frac{I1_i}{I1_{us}}) + \sum_{i=1}^{n} P32_i\ (1 - .5\ \frac{I1_i}{I1_{us}})]$ $Y_i = .15\ A_{us}\ [P33_i\ (1 - .5\ \frac{I1_i}{I1_{us}}) + \sum_{i=1}^{n} P33_i\ (1 - .5\ \frac{I1_i}{I1_{us}})]$ $Z_i = .15\ A_{us}\ (W_i + X_i + Y_i + \sum_{i=1}^{n} W_i + X_i + Y_i)$ Where: $(1 - .5\ \frac{I1_i}{I1_{us}})$ must be $\geq .40$ and $\leq .60$ M = $10,000
21	13.495	Vocational Education: Cooperative Programs	F S	100	20	F, P31	States allotted a fixed amount, plus a portion of the remainder based on population aged 15-19. $A_i = \$200{,}000 + (A_{us} - 200{,}000n)\ \frac{P31_i}{P31_{us}}$
22	13.502	Vocational Education: Exemplary Programs and Projects: Basic Grants	F S	100	10	F, P31	States allotted a fixed amount, plus a portion of the remainder based on population aged 15-19. $A_i = \$200{,}000 + (A_{us} - 200{,}000n)\ \frac{P31_i}{P31_{us}}$

Table 6: OE (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Typ & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
23	13.503	Vocational Education: Exemplary Programs and Projects: Discretionary Grants	F/P S/L	100	10	F, P31	States allotted a fixed amount, plus a portion of the remainder based on population aged 15-19. $A_i = \$200,000 + (A_{us} - 200,000n) \frac{P31_i}{P31_{us}}$
24	13.498	Vocational Education: Research and Training in Vocational Education: Basic Grants	F S	75/90	10	F, P31, P32, P33, I1	Same as OE-20-13.494.
25	13.498	Vocational Education: Research and Training in Vocational Education: Discretionary Grants	F/P G/O	CS	10	F, P31, P32, P33, I1	Same as OE-20-13.494.
26	13.499	Vocational Education: Special Programs for the Disadvantaged	F S	100	20	F, P31, P32, P33, I1	Same as OE-20-13.494.
27	13.500	Vocational Education: State Advisory Councils	F S	100	5	F, M, P31, P32, P33, I1	Same as OE-20-13.494, except: M = $50,000 and M = $150,000
28	13.493	Vocational Education: State Vocational Education Programs, Basic Grants	F S	50	430	F, P31, P32, P33, I1	Same as OE-20-13.494.
29	13.501	Vocational Education: Work-Study Programs for Vocational Education Students	F S	80	10	P34	Allotments based on the proportion of population aged 15-20. $A_i = (A_{us}) \frac{P34_i}{P34_{us}}$
		502 Higher Education					
30	13.453	Colleges of Agriculture and Mechanic Arts (Land Grant Colleges)	F S	100	10	P1, F2, P1	Each state receives a basic amount, plus a portion of the additional appropriation--part of which is divided equally among states and part is distributed on the basis of population (80%).
31	13.491	Community Service and Continuing Education Programs: Basic Grants	F S	67	15	F, P1	Each state receives a fixed amount plus a portion of the remainder based on population. $A_i = \$100,000 + [.9\, A_{us} - 50\ (\$100,000)] \frac{P1_i}{P1_{us}}$ Note: 10% of A_{us} is reserved for programs under 20 USC 1005a if allotment to each state is at least equal to that for fy 1972.
32	13.550	State Postsecondary Education Commissions: Comprehensive Statewide Planning	F S	100	2	F, H, P35	Available funds are distributed among states furnishing required information and making application: 50% equally among the states, and 50% on the basis of population aged 18-58. $A_i = \frac{.5\, A_{us}}{n} + .5\, A_{us} \frac{P35_i}{P35_{us}}$ H = 1974 amount

Table 6: OE (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
33	13.548	Student Assistance: Aid for Certain Students Attending Institutions of Higher Education: Grants to States for State Student Incentives	F S	50	20	S16	Allotments based on the number of students in attendance at institutions of higher education. $A_i = (A_{us})\,\frac{S16_i}{S16_{us}}$
		503 Research and General Education Aids					
34	13.408	Public Library Programs: Construction	F S	33-67	5	F, P1	States receive a fixed amount, plus a portion of the remainder based on total population. $A_i = \$100{,}000 + (A_{us} - 100{,}000n)\,\frac{P1_i}{P1_{us}}$
35	13.465	Public Library Programs: Interlibrary Cooperation	F S	100	3	F, P1	Each state receives a fixed amount, plus a portion of the remainder, distributed on the basis of population. $A_i = \$40{,}000 + (A_{us} - 40{,}000n)\,\frac{P1_i}{P1_{us}}$
36	99.999	Public Library Programs: Library Services	F S	33-67	?	F, P1	Each state receives a fixed amount, plus a portion of the remainder, distributed on the basis of population. $A_i = \$40{,}000 + (A_{us} - 40{,}000n)\,\frac{P1_i}{P1_{us}}$
37	99.999	School Library Resources, Textbooks, and Other Instructional Materials: Programs and Administration	F S	NO	?	S17	Distributed among states on basis of the number of children enrolled in public and private elementary and secondary schools. $A_i = (A_{us})\,\frac{S17_i}{S17_{us}}$
38	13.483	Strengthening Instruction in Science, Mathematics, Languages, and Other Critical Subjects: Equipment and Minor Remodeling	F S	50	20	P36, I6	Allotment to each state is based on the product of the school age population of the state and the state's allotment ratio (income based) in relation to the sum of such products for all states. $A_i = P36_i\,\left(1 - .5\,\frac{I6_i}{I6_{us}}\right)^{*} \div \sum_{i=1}^{n} P36_i\,\left(1 - .5\,\frac{I6_i}{I6_{us}}\right)^{*}$ *Allotment ratio must be greater than .33 and less than .67.
39	13.483	Strengthening Instruction in Science, Mathematics, Languages, and Other Critical Subjects: Expansion or Improvement of Supervisory Services and Administration	F S	50	?	F, P36	Funds allotted among states based on the distribution of school age children 5-17. $A_i = (A_{us})\,\frac{P36_i}{P36_{us}}$

TABLE 7. ENVIRONMENTAL PROTECTION AGENCY (EPA): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		304 Pollution Control and Abatement					
01	99.999	Air Pollution Prevention and Control: Planning and Program Operation	F S/L	(50/67): (60/75)	55	D16, M	Regional allowances are determined by the Administrator on the basis of such factors as population, extent of air pollution problem, and financial need. $M = .10\ A_{US}$
02	66.419	Water Pollution Prevention and Control: Pollution Control Programs	F/P S	100	50	R35	Distributed on the basis of the extent of the pollution problem, as measured by a count of pollution sources. $A_i = A_{US} (\frac{R35_i}{R35_{US}})$
03	66.418	Water Pollution Prevention and Control: Waste Treatment Works Construction	F/P S/L	75	1,940	M, E53	State allotments based on estimated costs of construction as determined by Congress. $A_i = E53_i$ M - 1972 allotment

TABLE 8. OFFICE OF HUMAN DEVELOPMENT (OHD): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		501 Elementary, Secondary, and Vocational Education					
01	13.600	Headstart Program: Program Grants	F/P G/O	80[5]	440	P40, I11, H	Up to 20% of appropriation may be reserved by the Secretary for use according to his discretion. Of the remainder: one-half distributed on basis of relative number of public assistance recipients and one-half on basis of relative number of children living in low income families. $A_i = \frac{P40_i}{P40_{us}} (.5\ A_{us}) + \frac{I11_i}{I11_{us}} (.5A_{us})$ H= FY 1975 obligations for Headstart program
		506 Social Services					
02	13.628	Child Abuse and Neglect Prevention and Treatment: Assistance to States for Developing, Strengthening, and Conducting Programs	F/P S	100	20	P14, F	Fixed amount distributed to each state, plus an additional amount based on relative number of children under 18. $A_i = \$20,000 + \frac{P14_i}{P14_{us}} (A_{us} - 20,000n)$
03	13.630	Developmental Disabilities: Basic Grants	F S	70/67[6]	35	I1, R36, M, P1	Two-thirds based on population weighted by financial need (relative per capita income) and one-third based on the extent of need for services and facilities for persons with developmental disabilities. M - Minimum for each state: $100,000 plus an amount which bears the same ratio to $100,000 as the difference between the appropriation and the 1971 authorization.
04	13.633	Older American Programs: Area Planning and Social Service Programs	F G/O	75[7]	80[b]	P44, M, H	Distributed on basis of the relative number of persons 60 years old and over. $A_i = \frac{P44_i}{P44_{us}} (A_{us})$ M = .5% A_{us} H = A_i FY 1973
05	13.635	Older American Programs: Nutrition Program for the Elderly	F S	90	125	P44, M	Distributed on basis of the relative number of persons 60 years old and over. $A_i = \frac{P44_i}{P44_{us}} (A_{us})$ M = .5% A_{us}
06	13.633	Older American Programs: Planning, Coordination, Evaluation, and Administration	F S	75	80b	P44, M	Distributed on basis of the relative number of persons 60 years old and over. $A_i = \frac{P44_i}{P44_{us}} (A_{us})$ M = .5% A_{us} or $160,000 whichever is greater

Table 8: OHD (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
07	13.625	Vocational Rehabilitation: Services for Social Security Disability Beneficiaries	F S	100	85	P45, M	Apportionment based on the number of disability beneficiaries in each state. $A_i = \frac{P45_i}{P45_{us}} (A_{us})$ M = $125,000
08	13.624	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilitation Services: Basic Grants to States	F S	80/50-67^a	680	P1, I1, M, M	Allotments based on the products of population and the square of the allotment percentage for each state. $A_i = \frac{P1_i \; (1 - .5 \frac{I1_i}{I1_{us}})^{2*}}{\sum_{i=1}^{n} P1_i \; (1 - .5 \frac{I1_i}{I1_{us}})^2}$ *The allotment percentage must not be more than .75% or less than .33%. M = .25% A_{us} or $2,000,000, whichever is greater. M = A_i FY 1973
09	13.626	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilitation Services: Innovation and Expansion Grants	F S	90	30	P1	Distributed on the basis of population. $A_i = \frac{P1_i}{P1_{us}} (A_{us})$ M = $50,000

TABLE 9. DEPARTMENT OF INTERIOR (INT): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		301 Water Resources and Power					
01	15.951	Water Resources Research: Assistance to State Institutions	F/P S	100	5	F, M	Each state receives an equal amount of funds. $A_i \doteq \$250,000$
		303 Recreational Resources					
02	15.605	Fish Restoration and Management	F S	75	15	F, M, L3, R13 N	A portion of available funds is deducted for federal administration, the remainder is allotted based on the area of each state (40%) and on the number of persons holding fishing licenses in each state (60%). $A_i = .4\ (.92\ A_{us})\ \frac{L3_i}{L3_{us}} + .6\ (.92\ A_{us})\ \frac{R13_i}{R13_{us}}$ $M = .05\ (.92\ A_{us})$ $N = .01\ (.92\ A_{us})$ Note: .08 A_{us} reserved for federal administration.
03	15.904	Historical Preservation: Comprehensive Planning and Survey Grants	F/P S	50	7	M, F, E19, E20	Each state is provided a fixed amount (F), plus a portion of the remainder--distributed to those requesting in excess of 3/4% Aus on the basis of the amount of federal matching funds requested by the state in their annual programs (E20). $F = .075\ A_{us}$ or amount requested in annual program (E19), whichever is smaller $M = .04\ A_{us}$
04	15.904	Historical Preservation: Grants to States for Projects	F/P S	50	20	M, F, E19, E20	Each state is provided a fixed amount (F), plus a portion of the remainder--distributed to those requesting in excess of 3/4% Aus on the basis of the amount of federal matching funds requested by the state in their annual programs (E20). $F = .075\ A_{us}$ or amount requested in annual program (E19),,whichever is smaller $M = .04\ A_{us}$
05	15.611	Hunter Safety Program	F S	75	55 ^{c}	M, N, P1	Apportioned on the basis of population. $A_i = A_{us} (\frac{P1_i}{P1_{us}})$ $M = .01\ A_{us}$ $N = .03\ A_{us}$
06	15.400	Outdoor Recreation: Grants to States for Planning, Acquiring, and Developing Land and Water Areas and Facilities	F/P S	50	165	F, M, P1, P37	Funds are apportioned: 40% equally among states, 30% based on population, 25% based on population residing in SMSA's, and 5% is reserved for contingency fund. $A_i = \frac{.4\ A_{us}}{n} + .3\ A_{us} (\frac{P1_i}{P1_{us}}) + .25\ A_{us}\ (\frac{P37_i}{P37_{us}})$ .05 A_{us} reserved for contingency fund. $M = .07\ A_{us}$

Table 9: INT (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
07	15.611	Wildlife Restoration	F S	75	55 ^{c}	N, M, L1, R16	Apportioned one-half on basis of land area and one-half on basis of paid hunting license holders. $A_i = .5\ A_{us}\ (\frac{L1_i}{L1_{us}}) + .5\ A_{us}\ (\frac{R16_i}{R16_{us}})$ $N = .005\ A_{us}$ $M = .05\ A_{us}$

TABLE 10. DEPARTMENT OF JUSTICE (DOJ): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		754 Law Enforcement Assistance					
01	16.516	Juvenile Justice and Delinquency Prevention: State and Local Programs, Planning and Administration	F S/L	90	10	P14, M	Allocation based on proportion of population under 18. $A_i = \frac{P14_i}{P14_{us}} (A_{us})$ M = $200,000
02	16.502	Law Enforcement and Criminal Justice: Basic Grants for Correctional Institutions and Facilities	F S	90	?	P1, D3	Allocated on basis of state population and LEAA discretion. $A_i = .5\ A_{us} (\frac{P1_i}{P1_{us}}) + .5\ A_{us} (D3_i)$
03	99.999	Law Enforcement and Criminal Justice: Planning Grants	F S	90:100	?	P1, D1, F	A fixed amount is allocated to each state and a portion of the remainder of funds is allocated according to relative population of each state. $A_i = \$200{,}000 + \frac{P1_i}{P1_{us}} (A_{us} - 200{,}000n)$

TABLE 11. DEPARTMENT OF LABOR (DOL): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		504 Training and Employment					
01	17.232	Comprehensive Manpower Services: Grants to State Prime Sponsors (CETA-Title I)	F S	100	1,270	E16, P15, I2	Title I program funds are divided as follows: - 80% for Grants to State Prime Sponsors - 4% for Provision of Statewide Manpower Services - 1% for Staffing and Servicing State Manpower Service Councils - 5% for Supplemental Vocational Education Assistance - 10% for hold-harmless and other adjustments
02	17.232	Statewide Manpower Services (CETA-Title I)	F/P S	100	65	E16, P15, I2	Sums available for Title I programs are to be alloted on basis of manpower allotment received in prior fiscal year (50%), number of unemployed persons (37.5%), and number of adults in low income families (12.5%).
03	17.232	Comprehensive Manpower Services: Staffing and Servicing State Manpower Service Councils (CETA-Title I)	F S	100	15	E16, P15, I2	$A_i = \frac{E16_i}{E16_{us}} (.50\ A_{us}) + \frac{P15_i}{P15_{us}} (.375\ A_{us}) + \frac{I2_i}{I2_{us}} (.125\ A_{us})$
04	17.232	Comprehensive Manpower Services: Supplemental Vocational Education Assistance (CETA-Title I)	F S	100	80	E16, P15, I2	
05	17.232	Emergency Public Service Jobs Program (CETA-Title VI)	F S/L	100	875	P16, P17, P18, D4	Not less than 90% of funds is to be allotted: in proportion to number of unemployed (50%), unemployed in areas of substantial unemployment (25%), and the excess number of unemployed (25%). The remainder is available for discretionary allocations. $A_i = .90\ A_{us}\ (.50\ \frac{P16_i}{P16_{us}} + .25\ \frac{P17_i}{P17_{us}} + .25\ \frac{P18_i}{P18_{us}}) + .10\ A_{us}\ \ (D4_i)$
06	17.225	Grants to States for Unemployment Compensation Administration	F/P S	100	655	P1, P19, E17, D3	Secretary's determination shall be based on factors such as population of the state, number of persons covered by insurance law, and the costs of administering the insurance law.
07	17.230	Manpower Services: Migrant and Seasonal Farmworker Manpower Program (CETA-Title III)	F/P G/O	100	50	D5, P20, F, H	No less than 80% of funds to be allocated among states in equitable manner (on basis of proportion of nation's farmworkers), no more than 20% is to be set aside for discretionary grants and contracts. F = $50,000 generally H = 90% of funds obligated in prior fiscal year

Table 11: DOL (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
08	17.232	Manpower Services: Youth Programs and Other Special Programs: Summer Youth Programs (CETA-Title III)	F S/L	100	200	E18, P15, I2	Allocations based on proportion of prior year's allotment (50%), number of unemployed (37.5%), and number of adults in low income families (12.5%). $A_i = \frac{E18_i}{E18_{us}} (.50\ A_{us}) + \frac{P15_i}{P15_{us}} (.375\ A_{us}) + \frac{I2_i}{I2_{us}} (.125\ A_{us})$
09	17.235	Older Americans Program: Community Service Employment	F/P G/O	90	10	P21, N	Initial state allotment for projects is based on proportion of population aged 55 years and over. $A_i = (\frac{P21_i}{P21_{us}})\ A_{us}$ N = .5% of the total amount appropriated for the fiscal year
10	17.232	Public Service Employment Program (CETA-Title II)	F S/L	100	670	P17, D6	Allocations based on proportion of unemployed in areas of substantial unemployment (80%) and on the discretion of the Secretary taking into account the severity of unemployment in such areas. $A_i = \frac{P17_i}{P17_{us}} (.80\ A_{us}) + D6_i\ (.20\ A_{us})$
11	17.226	Work Incentive Program for Recipients of Aid to Families with Dependent Children: Basic Grants for Employment Purposes	F S	90	210	P22, D3	Not less than 50% of the amount appropriated is allotted among states on the basis of the average number of individuals registered for manpower services, training and employment as required for A[illegible] recipients; remainder at the discretion of the Secretary. $A_i = \frac{P22_i}{P22_{us}} (.50\ A_{us}) + D3_i\ (.50\ A_{us})$
		505 Other Labor Services					
12	17.308	Farm Labor Contractor Registration	F/P S	100	1	P23	Funds are allocated to state employment service agencies for additional positions for the registration process of farm labor contractors according to the number of farm labor contractors in the state. $A_i = \frac{P23_i}{P23_{us}} (A_{us})$

TABLE 12. NATIONAL FOUNDATION FOR THE ARTS AND HUMANITIES (NFAH): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		503 Research and General Education Aids					
01	45.007	Promotion of the Arts: Basic Grants to States	F S	50	15	F, D18	Each state which has an approved plan shall be allotted a minimum amount of money (F). If sums appropriated are in excess of the amount required to meet minimum payments, the amount of such excess (up to 25% of total program funds) shall be available for discretionary grants to state and regional groups (D18). If any excess remains after 25% is reserved for discretionary funding, it is allotted equally among states which have approved plans. F = $200,000. If appropriated funds are not sufficient to meet this basic amount, the funds shall be allotted among the states in equal amounts.

TABLE 13. PUBLIC HEALTH SERVICE (PHS): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		551 Health Care Services					
01	13.257	Alcohol Abuse & Alcoholism Prevention, Treatment, and Rehabilitation: Basic Grants	F S	100	50	M, P1, I1	Allocation among states based one-third on population and two-thirds on population weighted by relative per capita income. $A_i = .33\,A_{us}(\frac{P1_i}{P1_{us}}) + .67\,A_{us}\,[(P1_i)\,\frac{I1_{us}}{I1_i} \div \sum_{i=1}^{n} (P1_i)\,\frac{I1_{us}}{I1_i}]$ $M = \$200,000$
02	13.211	Maternal & Child Health & Crippled Children's Services: Crippled Children's Services: Basic Grants	F S	50[9]	65	P7, P8, P9, I1, F, M	Distributed: (A) One-half among states on the basis of an equal amount to each state and in proportion to the number of children under 21; and (B) one-half is apportioned: 25% for special projects of national or regional significance, \$5,000,000 for special projects for crippled and mentally retarded children, and the remaining amount according to financial need as measured by children under 21 in rural and urban areas and per capita income. $A_i = \$70,000 + \frac{P7_i}{P7_{us}}(.5\,A_{us} - \$70,000n) + \frac{\frac{I1_{us}}{I1_i}(2P8_i + P9_i)}{\sum_{i=1}^{n} \frac{I1_{us}}{I1_i}(2P8_i + P9_i)}$ $[.5\,A_{us} - .25\,(.5\,A_{us}) - \$5,000,000]$ $M = 100\%$ of 1973 allotment
03	13.232	Maternal & Child Health & Crippled Children's Services: Maternal & Child Health Services: Basic Grants	F S	50[9]	200	I1, R31, R32, R33, F, M	Distributed: (A) One-half equally among states and on the basis of live births; (B) one-half is apportioned: 25% for special projects of national or regional significance, \$4,750,000 for special projects for mentally retarded children, and the remaining amount according to financial need—on basis of double-weighted rural births, urban births, and per capita income. $A_i = \$70,000 + \frac{R31_i}{R31_{us}}(.5\,A_{us} - \$70,000n) + \frac{\frac{I1_{us}}{I1_i}(2R32_i + R33_i)}{\sum_{i=1}^{n} \frac{I1_{us}}{I1_i}(2R32_i + R33_i)}$ $[.5\,A_{us} - .25\,(.5A_{us}) - \$4,750,000]$ $M = 1973$ allotment
		553 Prevention & Control of Health Problems					
04	13.269	Drug Abuse Prevention and Treatment: Basic Grants	F S	100	35	P1, I1, M	One-third based on population; two-thirds based on population weighted by financial need (relative per capita income). $A_i = .33\,A_{us}\,(\frac{P1_i}{P1_{us}}) + .67\,A_{us}[\frac{(P1_i)\frac{I1_{us}}{I1_i}}{\sum_{i=1}^{n} (P1_i)\,\frac{I1_{us}}{I1_i}}]$ $M = \$100,000$ adjusted by relation of appropriation to authorization

Table 13: PHS (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		554 Health Planning and Construction					
05	13.240	Community Mental Health Centers: Construction	F/O G/O	33-66[10]	25	P1, I1, M	One-third based on population; two-thirds based on population weighted by financial need (relative per capita income). $A_i = .33\ A_{us}\ (\frac{P1_i}{P1_{us}}) + .67\ A_{us}\ [\frac{(P1_i)\ \frac{I1_{us}}{I1_i}}{\sum_{i=1}^{n} (P1_i)\ \frac{I1_{us}}{I1_i}}]$ M = $100,000
06	13.286	State Review of Health Facilities Capital Expenditures	F S	100	5	E9, E10, E11, E12	States are reimbursed for costs of review, based on level of hospital and nursing home care expenditures. If $E10 \geq .5\ E9$, then $A_i = .5\ E9\ (\frac{E11}{E12})$ If $E10 \leq .5\ E9$, then $A_i = E10\ (\frac{E11}{E12})$

TABLE 14. SOCIAL AND REHABILITATION SERVICE (SRS): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		504 Training and Employment					
01	13.748	Work Incentive Program for Recipients of Aid to Families with Dependent Children: Supportive Services	F S	90	125	E54	States reimbursed for 90% of costs under state plan. $A_i = .90\ E54$
		506 Social Services					
02	13.707	Child Welfare Services: Basic Grants to States	F S	33-67	50	F, P7, I1	Fixed amount to each state; remainder based on products of population under 21 and the "allotment percentage." $A_i = \$70{,}000 + \frac{P7_i\ (1.0 - .5\ \frac{I1_i}{I1_{us}})}{\sum_{i=1}^{n} P7_i\ (1.0 - .5\ \frac{I1_i}{I1_{us}})}\ (A_{us} - 70{,}000n)$
03	13.724	Public Assistance: State and Local Personnel Training	F S	75	15	E55	States reimbursed for 75% of costs under state plan. $A_i = .75\ E55$
04	13.771 13.772	Social Services: Providing Services & Personnel Training (Title XX)	F S	75/90	1,995	E56, E57, M	States reimbursed 90% of costs for family planning and 75% for all other costs--population determines the maximum payment to any state for all expenditures other than those for personnel training. $A_i = .90\ E56 + .75\ E57$ $M = \frac{P1_i}{P1_{us}} A_{us}$
		551 Health Care Services					
05	13.714	Medical Assistance Programs (Medicaid)	F S	50-83	6,740	E58, E59, E60, E61, E62, E63, E64, I1	State reimbursement is equal to the "federal medical assistance percentage" of the total expended for medical assistance under the state plan, plus varying percentages for related allowable expenditures. $A_i = (1.00 - .45 \frac{I1_i^{2}}{I1_{us}{}^{2}})^{*}\ E58 + .75\ E59 + .90\ E60 + .75\ E61 + 1.00\ E62 + .90\ E63 + .50\ E64$ *"Medical assistance percentage" must not be less than .50 nor more than .83.

Table 14: SRS (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		604 Public Assistance and Other Income Supplements					
06	13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients	F S	50-65[11]	4,585	E66, P41, I1, E67, P42, E68, P43, E75	State reimbursement is based (1) on the "federal percentage," average expenditures, and number of recipients; or (2) the "federal medical assistance percentage" and total expenditures. $A_i = (5/6\ E66)\ (P41) + (1.00 - .50\ \frac{I1_i^2}{I1_{us}^2})^{*}\ [(E67)\ (P42) + (E68)\ (P43)]$ or $A_i = (1.00 - .45\ \frac{I1_i^2}{I1_{us}^2})^{**}\ (E75)$ *Federal percentage must be not less than .50 nor more than .65 **Medical assistance percentage must not be less than .50 nor more than .83
07	13.761	Aid to Families with Dependent Children: Grants for Program Administration	F S	50/75	530	E69, E70, E71, E72,	Payments to states based on varying percentages of costs under state plan. $A_i = .75\ E69 + .50\ E71 + .50\ E72$ or $A_i = .75\ E70 + .50\ E71 + .50\ E72$

TABLE 15. DEPARTMENT OF TRANSPORTATION (DOT): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		404 Ground Transportation					
01	99.999	Education and Training Programs for Highway Personnel	F S	70	?	E2, M	Payment to states are not to exceed 70% of the cost of education and training of state and local highway department employees. $A_i \leq .7\ E2_i$ M = .5% of all funds apportioned for any fiscal year, beginning with fy 1971, to any state under the federal-aid primary, secondary, extensions within urban areas and urban systems.
02	20.214	Highway Beautification: Landscaping and Scenic Enhancement	F S	100	45	E3	An amount equal to 3% of the funds apportioned to a state for federal-aid highways shall be allocated to that state for landscaping and scenic enhancement. $A_i = .03\ E3_i$
03	20.600	Highway Safety: Basic Grants	F S	70[1]	95	P1, R1, M	Funds apportioned on the basis of population (75%) and public road mileage (25%). $Ai = \frac{P1_i}{P1_{us}} (.75\ A_{us}) + \frac{R1_i}{R1_{us}} (.25\ A_{us})$ $M = .005\ A_{us}$
04	99.999	Highway Safety: Eliminating Hazards of Railway-Highway Crossings	F S	90	60	P2, P3, P4, L1, R2	Funds are apportioned one-half on basis of area, rural population, and mail route mileage, and one-half on basis of urban population and population in municipalities of places of 5,000 or more. $A_i = .5\ A_{us}\ [.33\ (\frac{L1_i}{L1_{us}}) + .33\ (\frac{P2_i}{P2_{us}}) + .33\ (\frac{R2_i}{R2_{us}})] + .5\ A_{us}\ [.5\ (\frac{P3_i}{P3_{us}}) + .5\ (\frac{P4_i}{P4_{us}})]$ $M = .005\ A_{us}$
05	99.999	Highway Safety: Incentive Grants: Seat Belt Law	F/P S	70[1]	?	D1	Amounts granted to states for projects are based on a percentage (from 10-25%) of the apportionments under Basic Grants for Highway Safety--this percentage is based on the extent of the seat belt law in each state. $A_i = D1_i$
06	99.999	Highway Safety: Incentive Grants: Reduced Traffic Fatalities	F/P S	70[1]	?	R3	Amounts granted to states for projects are based on a percentage (25%) of the apportionments under Basic Grants for Highway Safety.
07	99.999	Highway Safety: Program for the Elimination of Roadside Obstacles	F S	90	70	P1, R1, M	Funds apportioned on the basis of population (75%) and public road mileage (25%). $A_i = \frac{P1_i}{P1_{us}} (.75\ A_{us}) + \frac{R1_i}{R1_{us}} (.25\ A_{us})$ $M = .005\ A_{us}$

Table 15: DOT (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
08	99.999	Highway Safety: Projects for High-Hazard Locations	F S	90	70	P1, R1, M	Funds apportioned on the basis of population (75%) and public road mileage (25%). $A_i = \frac{P1_i}{P1_{us}} (.75\ A_{us}) + \frac{R1_i}{R_{1us}} (.25\ A_{us}) \qquad M = .005\ A_{us}$
09	99.999	Highway Safety: Safer Roads Demonstration Program	F S	90	95	P1, R1, M	Funds apportioned on the basis of population (75%) and public road mileage (25%). $A_i = \frac{P1_i}{P1_{us}} (.75\ A_{us}) + \frac{R1_i}{R1_{us}} (.25\ A_{us}) \qquad M = .005\ A_{us}$
10	99.999	Highway Safety: Special Bridge Replacement Program	F/P S	75	?	R4	Allocation based on bridge replacement need. $A_i = R4_i$
11	99.999	Highways: Federal-Aid Primary and Secondary Systems Extensions in Urban Areas	F S	70[1]	290	P4	Apportionment based on population in municipalities and other urban places of 5,000 or more. $A_i = \frac{P4_i}{P4_{us}}\ A_{us}$
12	99.999	Highways: Federal-Aid Primary Systems in Rural Areas	F S	70[1]	780	L1, P2, R2, M	Funds are apportioned: one-third in proportion to total area, one-third in proportion to rural population, and one-third in proportion to mail route mileage. $A_i = \frac{L1_i}{L1_{us}} (.33\ A_{us}) + \frac{P2_i}{P2_{us}} (.33\ A_{us}) + \frac{R2_i}{R2_{us}} (.33\ A_{us}) \qquad M = .005\ A_{us}$
13	99.999	Highways: Federal-Aid Secondary System in Rural Areas	F S	70[1]	430	L1, P2, R2, M	Funds are apportioned: one-third in proportion to total area, one-third in proportion to rural population, and one-third in proportion to mail route mileage. $A_i = \frac{L1_i}{L1_{us}} (.33\ A_{us}) + \frac{P2_i}{P2_{us}} (.33\ A_{us}) + \frac{R2_i}{R2_{us}} (.33\ A_{us}) \qquad M = .005\ A_{us}$
14	99.999	Highways: Federal-Aid Urban Systems	F S	70[1]	1,300	P3, M	Funds are apportioned in proportion to population in urban areas. $A_i = \frac{P3_i}{P3_{us}}\ A_{us} \qquad M = .005\ A_{us}$
15	99.999	Highways: Forest Highways	F S/L	100	30	R5	Funds are apportioned for forest highways in the several states according to the area and value of land owned by the U. S. within the national forests therein. $A_i = \frac{R5_i}{R5_{us}}\ A_{us}$

Table 15: DOT (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
16	20.205	Highways: Interstate System	F S	90^1	2,900	E4, M	Apportionments are based on the federal share of the estimated cost of completing the interstate system in each state in relation to the estimated cost of the federal share of completing the system in all states. $A_i = \frac{E4_i}{E4_{us}} A_{us}$ $M = .005\ A_{us}$
17	99.999	Highways: Priority Primary Routes	F S	70^1	290	L1, P2, P4, R2	Of the amounts authorized: one-half is apportioned on the basis of total area, rural population, and mail route mileage, and one-half is apportioned on the basis of population in municipalities and other urban places of 5,000 or more. $A_i = .5\ A_{us}\ [.33\ (\frac{L1_i}{L1_{us}}) + .33\ (\frac{P2_i}{P2_{us}}) + .33\ (\frac{R2_i}{R2_{us}})] +$ $.5\ A_{us}\ (\frac{P4_i}{P4_{us}})$
18	99.999	Highways: Public Land Highways	F/P S	100	?	D2	Allocated among states on the basis of need as determined by the Secretary. $A_i = D2_i$
19	99.999	Off-System Road Projects	F S	70^1	190	L1, P2, R6	Apportioned on the basis of total area (33%), rural population (33%), and off-system road mileage (33%). $A_i = \frac{L1_i}{L1_{us}} (.33\ A_{us}) + \frac{P2_i}{P2_{us}} (.33\ A_{us}) + \frac{R6_i}{R6_{us}} (.33\ A_{us})$
20	99.999	Surveys, Planning, Research, and Development for Highway Programs	F S	70/90	?	E3, M	Available amounts are a percentage of the amounts apportioned under federal-aid highway programs. M - Not to exceed 1.5% of amount appertioned under Federal aid highways (E3).
21	99.999	Transportation Planning in Urban Areas	F S	70/90	25	P5, M	Allocated in proportion to population in urbanized areas or parts in each state. $A_i = \frac{P5_i}{P5_{us}} A_{us}$ $M = .5\%\ A_{us}$
22	20.507	Urban Mass Transportation: Basic Grants	F L	50/80	300	P5, P6, E5, E6	One-half of the amount is apportioned on the basis of the population of the urbanized area in relation to total urban population and one-half is apportioned on the basis of the population of the urbanized area weighted by a factor of density. $A_i = \frac{P5_i}{P5_{us}} (.50\ A_{us}) + \frac{P6_i}{P6_{us}} (.50\ A_{us})$ M = .80 E5 .50 E6

Table 15; DOT (Cont.)

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
23	20.102	405 Air Transportation Airport and Airway Development: Certified Air Carrier and Reliever Airports	F/P S/L	(50: 75)/82	275	P1, L1, R7, D3	Amounts made available are apportioned: 1/3 (primarily to states) on the basis of population and land area, 1/3 to airport sponsors on the basis of number of passengers enplaned, and 1/3 to be distributed at the discretion of the Secretary. $A_i = .33\ A_{us}\ [.5\ (\frac{P1_i}{P1_{us}}) + .5\ (\frac{L1_i}{L1_{us}})]^{*} + .33\ A_{us}\ (\frac{R7_i}{R7_{us}})^{**} + .33\ A_{us}\ D3_i)$ *97% of this 1/3 is distributed in this manner to states--remaining 3% is reserved for distribution to outlying areas. **This 1/3 is distributed to airport sponsors (sponsors are any public agencies submitting an application for financial assistance).
24	20.102	Airport and Airway Development: General Aviation Airports	F/P S/L	75^1/82	35	P1, L1, D3	Funds are apportioned: 73.5% to states on the basis of population and land area, 25% distributed at the discretion of the Secretary, and 1.5% for outlying areas. $A_i = .735\ A_{us}\ [.5\ (\frac{P1_i}{P1_{us}}) + .5\ (\frac{L1_i}{L1_{us}})] + .25\ A_{us}\ (D3_i)$
25	20.004	406 Water Transportation State Boating Safety Program	F S	40^2	5	E7, R8, P, M	Of the amount available: 1/3 is allocated equally among the states, 1/3 on the basis of the number of vessels in the state, and 1/3 on the basis of funds expended for state boating safety program during the previous year. $A_i = \frac{.33\ A_{us}}{n} + \frac{R8_i}{R8_{us}}\ (.33\ A_{us}) + \frac{E7_i}{E7_{us}}\ (.33\ A_{us})$ $M = .05\ A_{us}$
26	20.700	407 Other Transportation Natural Gas Pipeline Safety: Grants to Aid State Enforcement	F S	50	1	E8, M	Funds are allocated among states based on the cost of conducting pipeline safety programs. $A_i = .5\ E8_i^{*}$ *M - Up to 50% of expenditures may be reimbursed. State agency must pay remaining costs and assure that state expenditure for such programs doesn't fall below the average expenditure for the last two fiscal years.

TABLE 16. VETERANS ADMINISTRATION (VA): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		703 Hospital and Medical Care for Veterans					
01	64.005	Veterans Hospital and Medical Care: Construction of State Nursing Home Facilities	F/P S	65	5	E74	Payments to states based on cost of construction to provide adequate nursing home care in accordance with prescribed standards. $A_i = E74_i$
02	64.014	Veterans Hospital and Medical Care: State Domiciliary Care	F S	x[14]	10	E29	Each state paid per diem rate for each veteran receiving such care in a state home. $A_i = E29_i$
03	64.015	Veterans Hospital and Medical Care: State Nursing Home Care	F S	x[14]	10	E30	Each state paid per diem rate for each veteran receiving such care in a state home. $A_i = E30_i$
04	64.016	Veterans Hospital and Medical Care: State Hospital Care	F S	x[14]	5	E31	Each state paid per diem rate for each veteran receiving such care in a state home. $A_i = E31_i$

TABLE 17. WATER RESOURCES COUNCIL (WRC): FORMULA GRANTS-FY 75

ID #	OMB Cat. #	Program Title/ Budget Subfunction	Type & Recip.	% Fed. Share	Approx. $ Amt. (mil.)	Formula Factors	Formula Description/Algorithm
		301 Water Resources and Power					
01	65.001	Water and Related Land Resources Planning: Basic Grants to States for Comprehensive Planning	F S	50	3	Pl, Ll, Il, D7	Portions of the total funds are allocated on basis of population, land area, per capita income, and need as determined by WRC. $A_i = \frac{Pl_i}{Pl_{us}} (.075\ A_{us}) + \frac{Ll_i}{Ll_{us}} (.075\ A_{us}) + \frac{Il_{us}}{Il_i} (.15\ A_{us}) + (.70\ A_{us})\ D7_i$

NOTES FOR FORMULAS

Federal Share

[1] Federal percentage is increased for those states with more than 5% of their total land area in nontaxable Indian lands and public domain lands, exclusive of National Forests, National Parks, and National Monuments.

[2] Federal percentage declined from 75% in FY 1972 to 33% in FY 1976.

[3] $600 per student.

[4] Federal percentage decreased after FY 1975.

[5] Secretary may increase the Federal percentage.

[6] (90, 80)/90 for recipients in "poverty areas."

[7] Federal share is 90% if services are part of a comprehensive and coordinated system in an area in which there is an approved plan.

[8] Federal share may be up to 90% in "poverty areas."

[9] Non-Federal match only required for first $70,000; no match is required for the portion of funds distributed according to formula.

[10] Federal share for recipients in "poverty areas" is 90%.

[11] States have option of using Federal Medical Assistance Percentage.

[12] Federal payment is flat rate per meal served.

[13] Non-Federal match is decreased by the percentage by which the State per capita income is below the U.S. average.

[14] Federal rate is a flat rate per patient-day, but shall not exceed 50% of costs.

Approximate $ Amount

[a] Amount includes OE-12, OE-14, and OE-15.

[b] Amount includes OHD-04 and OHD-06.

[c] Amount includes INT-05 and INT-07.

Source: ACIR, A Catalog of Federal Grant-in-Aid Programs to State and Local Governments: Grants Funded FY 1975, Washington, D.C., October, 1977.

SECTION 2-5. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT

The Index of Formula Grant-in-Aid Programs, by Formula Element, Appendix (2-5): 1, indicates for each formula element the programs in which it is used. The organization of the Index is identical to that of the Dictionary--subcategories of each type of formula element are organized numerically. Whereas Table (2-4): 4 indicated the number of times and the number of programs in which categories of formula elements (such as population measures) were used, it did not indicate the element subcategories (e.g., total population, urban population, rural population). The Index (found at the end of this section) permits the quick identification of formula elements by administering agency and frequency of use. This section will review the frequency of use and types of agencies using some of the more significant formula elements in each category.

Population

Population elements are used in 60% of all formula based programs (88 out of 147) which distribute over $18.4 billion. Total population (P1) is the most prevalent population element--found in 29 separate formulas which distribute $2.9 billion. Rural population (P2) is used less frequently (in nine programs), although its related programs account for $2.0 billion. Overall, no single population element (out of the 45) influences a major portion of the $18.4 billion distributed by programs containing population elements. However, more significant amounts of money are influenced when groupings of elements are made (e.g., population unemployment elements P15 - P19 are used in formulas distributing $5.2 billion).

Income

Income elements are used in 22% of all programs (32 out of 147) which distribute $17.2 billion. Per capita income (I1) is used most frequently--in

17 formulas distributing $13 billion. Medicaid and AFDC account for the majority of funds ($11.3 billion) affected by per capita income. Agencies within the Department of Health, Education, and Welfare administer 65% of the programs which contain income elements--while overall these agencies administer only 41% of all formula programs.

Expenditures

Expenditure elements are used in 32% of all formula programs (52 out of 147); however, they influence the majority of formula program outlays--being used in formulas which distribute $25.9 billion. Generally, expenditure elements are unique to each program; therefore, individual elements are only significant insofar as they are used in the largest of programs such as Medicaid, AFDC, Interstate Highway System, etc.

Expenditure elements are used in over half of the programs administered by the Department of Agriculture, in half of the Department of Labor programs, and in most or all of the Social and Rehabilitation Service and Veterans Administration programs. About one-quarter of the Office of Education programs use expenditure formula elements. The Office of Human Development does not use any expenditure elements in its nine programs.

Land, Student, Other

Measures of land area are used in a total of 13 programs (9% of total) which allocate $2.1 billion. The administering agencies using formulas which include land area are the Department of Agriculture, the Department of Interior, the Department of Transportation, and the Water Resources program.

The 11 programs (7% of total) using measures of student population are predictably mostly administered by the Office of Education (nine) and affect allocations of $.9 billion.

The "Other" classification (R) identifies miscellaneous elements, not easily grouped. There are 32 programs using Other elements, of which seven are in the Department of Agriculture and 14 are in the Department of Transportation. Although difficult to categorize, these elements are in programs allocating over $5 billion. Of this amount, Department of Transportation programs using measures of road mileage account for over $2 billion and Department of Agriculture Child Nutrition Programs using measures of number of meals served and value of agricultural commodities account for almost $2 billion.

Discretion

Discretionary elements are found in 21 programs (14% of total), administered by nine of the 17 agencies. The amount of money allocated by programs containing discretionary elements is over $4.7 billion; however, only a small amount of this is influenced by discretion since discretion is usually a minor part of a formula or simply affects the application of specified criteria.

Fixed or Equal Amount

Forty-three of the 147 programs (29%) make use of a fixed or equal amount of money distributed to each recipient as part of the formula. The majority (23) of the programs containing fixed or equal amounts are administered by the Office of Education.

Formula Constraints

Forty-three percent (64 out of 147) of all programs use constraints of some type. The use of such constraints demonstrates the apparently haphazard and random nature of formula construction. The Office of Human Development has nine formula programs, six of which use a minimum (N) but none of which use a maximum (M). On the other hand, the Department of Interior has seven formula programs, seven of which use a maximum but only three of which use a minimum. Of the Department of Transportation's 26 programs, nine use a minimum and four use a maximum.

APPENDIX (2-5): 1. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT--FY 75

Table	Formula Element	Page
1	DISCRETIONARY ELEMENTS	97
2	EXPENDITURE ELEMENTS	98
3	INCOME ELEMENTS	102
4	LAND ELEMENTS	104
5	POPULATION ELEMENTS	105
6	OTHER ELEMENTS	110
7	STUDENT ELEMENTS	112
8	FIXED/EQUAL AMOUNT ELEMENTS	114
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TABLE 1. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- DISCRETIONARY ELEMENTS -

Formula Element	Related Program	
D1	DOT-05-99.999	Highway Safety: Eliminating Hazards of Railway-Highway Crossings
D2	DOT-18-99.999	Highways: Public Land Highways
D3	AGR-17-10.552	Child Nutrition Programs: Special Food Service for Children in Service Institutions
	DOJ-02-16.502	Law Enforcement and Criminal Justice: Basic Grants for Correctional Institutions and Facilities
	DOJ-03-99.999	Law Enforcement and Criminal Justice: Planning Grants
	DOL-06-17.225	Grants to States for Unemployment Compensation Administration
	DOL-11-17.226	Work Incentive Program for Recipients of Aid to Families with Dependent Children: Basic Grants for Employment Purposes
	DOT-23-20.102	Airport and Airway Development: Certified Air Carrier and Reliever Airports
	DOT-24-20.102	Airport and Airway Development: General Aviation Airports
D4	DOL-05-17.232	Emergency Public Service Jobs Program (CETA-Title VI)
D5	DOL-07-17.230	Manpower Services: Migrant and Seasonal Farmworker Manpower Program (CETA-Title III)
D6	DOL-10-17.232	Public Service Employment Program (CETA-Title II)
D7	WRC-01-65.001	Water and Related Land Resources Planning: Basic Grants to States for Comprehensive Planning
D9	OE-03-13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies
D10	OE-13-13.477	Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activities
D11	AGR-01-10.656	Cooperative Forest Fire Control
D12	AGR-06-10.500	Extension Services in Disadvantaged Agricultural Extension Areas with Special Needs
D14	AGR-18-10.556	Child Nutrition Programs: Special Milk Program
D16	EPA-01-99.999	Air Pollution Prevention and Control: Planning and Program Operation
D17	COM-01-11.418	Coastal Zone Management: Development of Management Program
D18	NFAH-01-45.007	Promotion of the Arts: Basic Grants to States

TABLE 2. INDEX OF FORMULA GRANT-IN-AID PROGRAMS,
BY FORMULA ELEMENT - FY 75

- EXPENDITURE ELEMENTS -

Formula Element	Related Program	
E2	DOT-01-99.999	Education and Training Programs for Highway Personnel
E3	DOT-02-20.214	Highway Beautification: Landscaping and Scenic Enhancement
	DOT-20-99.999	Surveys, Planning, Research, and Development for Highway Programs
E4	DOT-16-20.205	Highways: Interstate System
E5	DOT-22-20.507	Urban Mass Transportation: Basic Grants
E6	DOT-22-20.507	Urban Mass Transportation: Basic Grants
E7	DOT-25-20.004	State Boating Safety Program
E8	DOT-26-20.700	Natural Gas Pipeline Safety: Grants to Aid State Enforcement
E9	PHS-06-13.286	State Review of Health Facilities Capital Expenditures
E10	PHS-06-13.286	State Review of Health Facilities Capital Expenditures
E11	PHS-06-13.286	State Review of Health Facilities Capital Expenditures
E12	PHS-06-13.286	State Review of Health Facilities Capital Expenditures
E13	COM-04-11.506	State Marine Schools: Student Subsistence Payments
E15	DOD-01-12.315	Civil Defense: Contributions to States for Personnel and Administrative Expenses
E16	DOL-01-17.232	Comprehensive Manpower Services: Grants to State Prime Sponsors (CETA-Title I)
	DOL-02-17.232	Statewide Manpower Services (CETA-Title I)
	DOL-03-17.232	Comprehensive Manpower Services: Staffing and Servicing State Manpower Service Councils (CETA-Title I)
	DOL-04-17.232	Comprehensive Manpower Services: Supplemental Vocational Education Assistance (CETA-Title I)
E17	DOL-06-17.225	Grants to States for Unemployment Compensation Administration
E18	DOL-08-17.232	Manpower Services: Youth Programs and Other Special Programs: Summer Youth Programs (CETA-Title III)
E19	INT-03-15.904	Historical Preservation: Comprehensive Planning and Survey Grants
	INT-04-15.904	Historical Preservation: Grants to States for Projects
E20	INT-03-15.904	Historical Preservation: Comprehensive Planning and Survey Grants
	INT-04-15.904	Historical Preservation: Grants to States for Projects

Formula Element	Related Program	
E21	OE-03-13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies
	OE-06-13.427	Educationally Deprived Children: State Operated Programs: Handicapped Children
	OE-07-13.429	Educationally Deprived Children: State Operated Programs: Migratory Children
	OE-08-13.431	Educationally Deprived Children: State Operated Programs: Neglected or Delinquent Children
E22	OE-04-13.511	Educationally Deprived Children: Special Grants
E23	OE-05-13.512	Educationally Deprived Children: Special Incentive Grants
E24	OE-13-13.477	Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activities
E25	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
E26	OE-15-13.478	Federally Affected Public Schools: Payments Due to Sudden and Substantial Increases in Attendance
E27	OE-15-13.478	Federally Affected Public Schools: Payments Due to Sudden and Substantial Increases in Attendance
E28	OE-16-13.534	Indian Education: Grants to Local Education Agencies
E29	VA-02-64.014	Veterans Hospital and Medical Care: State Domiciliary Care
E30	VA-03-64.015	Veterans Hospital and Medical Care: State Nursing Home Care
E31	VA-04-64.016	Veterans Hospital and Medical Care: State Hospital Care
E32	AGR-01-10.656	Cooperative Forest Fire Control
E33	AGR-02-10.661	Forest Management, Production, and Protection: Cooperation with States
E34	AGR-03-10.661	Youth Conservation Corps: Projects for Employment of Youth on Non-Federal Public Lands
E35	AGR-04-10.203	Agricultural Experiment Stations: Support Grants
E38	AGR-07-10.202	Promoting Research in Forestry
E39	AGR-08-10.204	Rural Development and Small Farm Research
E42	AGR-14-10.553	Child Nutrition Programs: School Breakfast Program
E43	AGR-14-10.553	Child Nutrition Programs: School Breakfast Program
E44	AGR-14-10.553	Child Nutrition Programs: School Breakfast Program

Formula Element	Related Program	
E45	AGR-15-10.555	Child Nutrition Programs: School Lunch Food Assistance Programs
E46	AGR-16-99.999	Child Nutrition Programs: Special Assistance for Free and Reduced-Price School Lunches
E47	AGR-16-99.999	Child Nutrition Programs: Special Assistance for Free and Reduced-Price School Lunches
E48	AGR-18-10.556	Child Nutrition Programs: Special Milk Program
E50	AGR-19-99.999	Child Nutrition Programs: State Administrative Expenses
E51	AGR-20-99.999	Food Stamp Program: Administrative Costs
E53	EPA-03-66.418	Water Pollution Prevention and Control: Waste Treatment Works Construction
E54	SRS-01-13.748	Work Incentive Program for Recipients of Aid to Families with Dependent Children: Supportive Services
E55	SRS-03-13.724	Public Assistance: State and Local Personnel Training
E56	SRS-04-13.771, 13.772	Social Services: Providing Services and Personnel Training
E57	SRS-04-13.771, 13.772	Social Services: Providing Services and Personnel Training
E58	SRS-05-13.714	Medical Assistance Programs (Medicaid)
E59	SRS-05-13.714	Medical Assistance Programs (Medicaid)
E60	SRS-05-13.714	Medical Assistance Programs (Medicaid)
E61	SRS-05-13.714	Medical Assistance Programs (Medicaid)
E62	SRS-05-13.714	Medical Assistance Programs (Medicaid)
E63	SRS-05-13.714	Medical Assistance Programs (Medicaid)
E64	SRS-05-13.714	Medical Assistance Programs (Medicaid)
E66	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients
E67	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients
E68	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients

Formula Element	Related Program	
E69	SRS-07-13.761	Aid to Families with Dependent Children: Grants for Program Administration
E70	SRS-07-13.761	Aid to Families with Dependent Children: Grants for Program Administration
E71	SRS-07-13.761	Aid to Families with Dependent Children: Grants for Program Administration
E72	SRS-07-13.761	Aid to Families with Dependent Children: Grants for Program Administration
E74	VA-01-64.005	Veterans Hospital and Medical Care: Construction of State Nursing Home Facilities
E75	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients

TABLE 3. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- INCOME ELEMENTS -

Formula Element	Related Program	
I1	OE-20-13.494	Vocational Education: Consumer and Homemaking Education
	OE-24-13.498	Vocational Education: Research and Training in Vocational Education: Basic Grants
	OE-25-13.498	Vocational Education: Research and Training in Vocational Education: Discretionary Grants
	OE-26-13.499	Vocational Education: Special Programs for the Disadvantaged
	OE-27-13.500	Vocational Education: State Advisory Councils
	OE-28-13.493	Vocational Education: State Vocational Education Programs, Basic Grants
	OHD-03-13.630	Developmental Disabilities: Basic Grants
	OHD-08-13.624	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilitation Services: Basic Grants to States
	PHS-01-13.257	Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation: Basic Grants
	PHS-02-13.211	Maternal and Child Health and Crippled Children's Services: Basic Grants
	PHS-03-13.232	Maternal and Child Health and Crippled Children's Services: Maternal and Child Health Services: Basic Grants
	PHS-04-13.269	Drug Abuse Prevention and Treatment: Basic Grants
	PHS-05-13.240	Community Mental Health Centers: Construction
	SRS-02-13.707	Child Welfare Services: Basic Grants to States
	SRS-05-13.714	Medical Assistance Programs (Medicaid)
	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients
	WRC-01-65.001	Water and Related Land Resources Planning: Basic Grants to States for Comprehensive Planning
I2	DOL-01-17.232	Comprehensive Manpower Services: Grants to State Prime Sponsors (CETA-Title I)
	DOL-02-17.232	Statewide Manpower Services (CETA-Title I)
	DOL-03-17.232	Comprehensive Manpower Services: Staffing and Servicing State Manpower Service Councils (CETA-Title I)
	DOL-04-17.232	Comprehensive Manpower Services: Supplemental Vocational Education Assistance (CETA-Title I)
	DOL-08-17.232	Manpower Services: Youth Programs and Other Special Programs: Summer Youth Programs (CETA-Title III)
I3	OE-05-13.512	Educationally Deprived Children: Special Incentive Grants
I4	OE-03-13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies
I5	OE-04-13.511	Educationally Deprived Children: Special Grants
I6	OE-38-13.483	Strengthening Instruction in Science, Mathematics, Languages, and Other Critical Subjects: Equipment and Minor Remodeling

Formula Element	Related Program	
I7	AGR-09-10.418	Water and Waste Disposal Systems for Rural Areas
	AGR-11-10.424	Rural Industrialization Assistance Grants for Development of Private Business
I8	AGR-17-10.552	Child Nutrition Programs: Special Food Service for Children in Service Institutions
I9	AGR-19-99.999	Child Nutrition Programs: State Administrative Expenses
I11	CSA-01-49.002	Community Action: Community Action Agency Grants
	OHD-01-13.600	Headstart Program: Program Grants

TABLE 4. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- LAND ELEMENTS -

Formula Element	Related Program	
L1	INT-07-15.611	Wildlife Restoration
	DOT-04-99.999	Highway Safety: Eliminating Hazards of Railway-Highway Crossings
	DOT-12-99.999	Highways: Federal-Aid Primary Systems in Rural Areas
	DOT-13-99.999	Highways: Federal-Aid Secondary System in Rural Areas
	DOT-17-99.999	Highways: Priority Primary Routes
	DOT-19-99.999	Off-System Road Projects
	DOT-23-20.102	Airport and Airway Development: Certified Air Carrier and Reliever Airports
	DOT-24-20.102	Airport and Airway Development: General Aviation Airports
	WRC-01-65.001	Water and Related Land Resources Planning: Basic Grants to States for Comprehensive Planning
L3	INT-02-15.605	Fish Restoration and Management
L4	AGR-03-10.661	Youth Conservation Corps: Projects for Employment of Youth on Non-Federal Public Lands
L5	AGR-07-10.202	Promoting Research in Forestry
L6	AGR-10-10.662	Rural Community Fire Protection

TABLE 5. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- POPULATION ELEMENTS -

Formula Element	Related Program	
P1	AGR-03-10.661	Youth Conservation Corps: Projects for Employment of Youth on Non-Federal Public Lands
	AGR-08-10.204	Rural Development and Small Farm Research
	CSC-01-27.012	Intergovernmental Personnel Program: Basic Grants for Strengthening State and Local Personnel Administration
	DOD-01-12.315	Civil Defense: Contributions to States for Personnel and Administrative Expenses
	OE-18-13.542	Strengthening State and Local Education Agencies: Comprehensive Educational Planning and Evaluation
	OE-19-13.519	Supplementary Education Centers and Services: Guidance, Counseling, and Testing
	OE-30-13.453	Colleges of Agriculture and Mechanic Arts (Land Grant Colleges)
	OE-31-13.491	Community Service and Continuing Education Programs: Basic Grants
	OE-34-13.408	Public Library Programs: Construction
	OE-35-13.465	Public Library Programs: Interlibrary Cooperation
	OE-36-99.999	Public Library Programs: Library Services
	OHD-03-13.630	Developmental Disabilities: Basic Grants
	OHD-08-13.624	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilitation Services: Basic Grants to States
	OHD-09-13.626	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilibation Services: Innovation and Expansion Grants
	INT-05-15.611	Hunter Safety Program
	INT-06-15.400	Outdoor Recreation: Grants to States for Planning, Acquiring, and Developing Land and Water Areas and Facilities
	DOJ-02-16.502	Law Enforcement and Criminal Justice: Basic Grants for Correctional Institutions and Facilities
	DOJ-03-99.999	Law Enforcement and Criminal Justice: Planning Grants
	DOL-06-17.225	Grants to States for Unemployment Compensation Administration
	PHS-01-13.257	Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation: Basic Grants
	PHS-04-13.269	Drug Abuse Prevention and Treatment: Basic Grants
	PHS-05-13.240	Community Mental Health Centers: Construction
	DOT-03-20.600	Highway Safety: Basic Grants
	DOT-07-99.999	Highway Safety: Program for the Elimination of Roadside Obstacles
	DOT-08-99.999	Highway Safety: Projects for High-Hazard Locations
	DOT-09-99.999	Highway Safety: Safer Roads Demonstration Program
	DOT-23-20.102	Airport and Airway Development: Certified Air Carrier and Reliever Airports
	DOT-24-20.102	Airport and Airway Development: General Aviation Airports
	WRC-01-65.001	Water and Related Land Resources Planning: Basic Grants to States for Comprehensive Planning

Formula Element	Related Program	
P2	AGR-04-10.203	Agricultural Experiment Stations: Support Grants
	AGR-05-10.500	Cooperative Agricultural Extension Work
	AGR-08-10.204	Rural Development and Small Farm Research
	AGR-11-10.424	Rural Industrialization Assistance Grants for Development of Private Business
	DOT-04-99.999	Highway Safety: Eliminating Hazards of Railway-Highway Crossings
	DOT-12-99.999	Highways: Federal-Aid Primary Systems in Rural Areas
	DOT-13-99.999	Highways: Federal-Aid Secondary System in Rural Areas
	DOT-17-99.999	Highways: Priority Primary Routes
	DOT-19-99.999	Off-System Road Projects
P3	DOT-04-99.999	Highway Safety: Eliminating Hazards of Railway-Highway Crossings
	DOT-14-99.999	Highways: Federal-Aid Urban Systems
P4	DOT-04-99.999	Highway Safety: Eliminating Hazards of Railway-Highway Crossings
	DOT-11-99.999	Highways: Federal-Aid Primary and Secondary Systems Extensions in Urban Areas
	DOT-17-99.999	Highways: Priority Primary Routes
P5	DOT-21-99.999	Transportation Planning in Urban Areas
	DOT-22-20.507	Urban Mass Transportation: Basic Grants
P6	DOT-22-20.507	Urban Mass Transportation: Basic Grants
P7	PHS-02-13.211	Maternal and Child Health and Crippled Children's Services: Basic Grants
	SRS-02-13.707	Child Welfare Services: Basic Grants to States
P8	PHS-02-13.211	Maternal and Child Health and Crippled Children's Services: Basic Grants
P9	PHS-02-13.211	Maternal and Child Health and Crippled Children's Services: Basic Grants
P10	COM-01-11.418	Coastal Zone Management: Development of Management Program
P11	DOD-01-12.315	Civil Defense: Contributions to States for Personnel and Administrative Expenses
P12	DOD-01-12.315	Civil Defense: Contributions to States for Personnel and Administrative Expenses
P13	DOD-02-12.305	Civil Defense: Shelters and Other Protective Facilities
P14	OHD-02-13.628	Child Abuse and Neglect Prevention and Treatment: Assistance to States for Developing, Strengthening, and Conducting Programs
	DOJ-01-16.516	Juvenile Justice and Delinquency Prevention: State and Local Programs, Planning and Administration

Formula Element	Related Program	
P15	CSA-01-49.002	Community Action: Community Action Agency Grants
	DOL-01-17.232	Comprehensive Manpower Services: Grants to State Prime Sponsors (CETA-Title I)
	DOL-02-17.232	Statewide Manpower Services (CETA-Title I)
	DOL-03-17.232	Comprehensive Manpower Services: Staffing and Servicing State Manpower Service Councils (CETA-Title I)
	DOL-04-17.232	Comprehensive Manpower Services: Supplemental Vocational Education Assistance (CETA-Title I)
	DOL-08-17.232	Manpower Services: Youth Programs and Other Special Programs: Summer Youth Programs (CETA-Title III)
P16	DOL-05-17.232	Emergency Public Service Jobs Program (CETA-Title VI)
P17	DOL-05-17.232	Emergency Public Service Jobs Program (CETA-Title VI)
	DOL-10-17.232	Public Service Employment Program (CETA-Title II)
P18	DOL-05-17.232	Emergency Public Service Jobs Program (CETA-Title VI)
P19	DOL-06-17.225	Grants to States for Unemployment Compensation Administration
P20	DOL-07-17.230	Manpower Services: Migrant and Seasonal Farmworker Manpower Program (CETA-Title III)
P21	DOL-09-17.235	Older Americans Program: Community Service Employment
P22	DOL-11-17.226	Work Incentive Program for Recipients of Aid to Families with Dependent Children: Basic Grants for Employment Purposes
P23	DOL-12-17.308	Farm Labor Contractor Registration
P24	OE-01-13.400	Adult Education: Basic Grants
P25	OE-02-13.449	Education of the Handicapped: Basic Grants
P26	OE-03-13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies
P27	OE-03-13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies
P28	OE-05-13.512	Educationally Deprived Children: Special Incentive Grants
P29	OE-07-13.429	Educationally Deprived Children: State Operated Programs: Migratory Children
P30	OE-09-13.525	Emergency School Aid: Basic Grants to Local Education Agencies
	OE-10-13.526	Emergency School Aid: Pilot Programs or Projects
	OE-11-13.529	Emergency School Aid: Special Programs and Project Grants to Non-Profit Organizations

Formula Element	Related Program	
P31	OE-20-13.494	Vocational Education: Consumer and Homemaking Education
	OE-21-13.495	Vocational Education: Cooperative Programs
	OE-22-13.502	Vocational Education: Exemplary Programs and Projects: Basic Grants
	OE-23-13.502	Vocational Education: Exemplary Programs and Projects: Discretionary Grants
	OE-24-13.498	Vocational Education: Research and Training in Vocational Education: Basic Grants
	OE-25-13.498	Vocational Education: Research and Training in Vocational Education: Discretionary Grants
	OE-26-13.499	Vocational Education: Special Programs for the Disadvantaged
	OE-27-13.500	Vocational Education: State Advisory Councils
	OE-28-13.493	Vocational Education: State Vocational Education Programs, Basic Grants
P32	OE-20-13.494	Vocational Education: Consumer and Homemaking Education
	OE-24-13.498	Vocational Education: Research and Training in Vocational Education: Basic Grants
	OE-25-13.498	Vocational Education: Research and Training in Vocational Education: Discretionary Grants
	OE-26-13.499	Vocational Education: Special Programs for the Disadvantaged
	OE-27-13.500	Vocational Education: State Advisory Councils
	OE-28-13.493	Vocational Education: State Vocational Education Programs, Basic Grants
P33	OE-20-13.494	Vocational Education: Consumer and Homemaking Education
	OE-24-13.498	Vocational Education: Research and Training in Vocational Education: Basic Grants
	OE-25-13.498	Vocational Education: Research and Training in Vocational Education: Discretionary Grants
	OE-26-13.499	Vocational Education: Special Programs for the Disadvantaged
	OE-27-13.500	Vocational Education: State Advisory Councils
	OE-28-13.493	Vocational Education: State Vocational Education Programs, Basic Grants
P34	OE-29-13.501	Vocational Education: Work-Study Programs for Vocational Education Students
P35	OE-32-13.550	State Postsecondary Education Commissions: Comprehensive Statewide Planning
P36	OE-19-13.519	Supplementary Education Centers and Services: Guidance, Counseling, and Testing
	OE-38-13.483	Strengthening Instruction in Science, Mathematics, Languages, and Other Critical Subjects: Equipment and Minor Remodeling
	OE-39-13.483	Strengthening Instruction in Science, Mathematics, Languages, and Other Critical Subjects: Expansion or Improvement of Supervisory Services and Administration
P37	INT-06-15.400	Outdoor Recreation: Grants to States for Planning, Acquiring, and Developing Land and Water Areas and Facilities

Formula Element	Related Program	
P38	AGR-04-10.203	Agricultural Experiment Stations: Support Grants
	AGR-05-10.500	Cooperative Agricultural Extension Work
	AGR-08-10.204	Rural Development and Small Farm Research
P39	AGR-09-10.418	Water and Waste Disposal Systems for Rural Areas
	AGR-10-10.662	Rural Community Fire Protection
P40	CSA-01-49.002	Community Action: Community Action Agency Grants
	OHD-01-13.600	Headstart Program: Program Grants
P41	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients
P42	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients
P43	SRS-06-13.761	Aid to Families with Dependent Children: Grants for Payments to Aid Recipients
P44	OHD-04-13.633	Older American Programs: Area Planning and Social Service Programs
	OHD-05-13.635	Older American Programs: Nutrition Program for the Elderly
	OHD-06-13.633	Older American Programs: Planning, Coordination, Evaluation, and Administration
P45	OHD-07-13.625	Vocational Rehabilitation: Services for Social Security Disability Beneficiaries

TABLE 6. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- OTHER ELEMENTS -

Formula Element	Related Program	
R1	DOT-03-20.600	Highway Safety: Basic Grants
	DOT-07-99.999	Highway Safety: Program for the Elimination of Roadside Obstacles
	DOT-08-99.999	Highway Safety: Projects for High-Hazard Locations
	DOT-09-99.999	Highway Safety: Safer Roads Demonstration Program
R2	DOT-04-99.999	Highway Safety: Eliminating Hazards of Railway-Highway Crossings
	DOT-12-99.999	Highways: Federal-Aid Primary Systems in Rural Areas
	DOT-13-99.999	Highways: Federal-Aid Secondary System in Rural Areas
	DOT-17-99.999	Highways: Priority Primary Routes
R3	DOT-06-99.999	Highway Safety: Program for the Elimination of Roadside Obstacles
R4	DOT-10-99.999	Highway Safety: Special Bridge Replacement Program
R5	DOT-15-99.999	Highways: Forest Highways
R6	DOT-19-99.999	Off-System Road Projects
R7	DOT-23-20.102	Airport and Airway Development: Certified Air Carrier and Reliever Airports
R8	DOT-25-20.004	State Boating Safety Program
R9	COM-01-11.418	Coastal Zone Management: Development of Management Program
R10	COM-02-11.407	Commercial Fisheries: Research and Development Basic Grants
R11	COM-02-11.407	Commercial Fisheries: Research and Development Basic Grants
R12	COM-05-11.308	Public Works and Economic Development: Supplemental and Basic Grants
R13	INT-02-15.605	Fish Restoration and Management
R16	INT-07-15.611	Wildlife Restoration
R18	OE-12-13.478	Federally Affected Areas: Payments to Compensate for Federally Owned Property
R19	OE-13-13.477	Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activities
R20	AGR-02-10.661	Forest Management, Production, and Protection: Cooperation with States

Formula Element	Related Program	
R21	AGR-07-10.202	Promoting Research in Forestry
R22	AGR-12-10.550	Child Nutrition Programs: Commodity Distribution Differential Payments
R23	AGR-12-10.550	Child Nutrition Programs: Commodity Distribution Differential Payments
R24	AGR-13-10.554 AGR-15-10.555	Child Nutrition Programs: Non-Food Assistance Child Nutrition Programs: School Lunch Food Assistance Programs
R25	AGR-14-10.553	Child Nutrition Programs: School Breakfast Program
R26	AGR-14-10.553	Child Nutrition Programs: School Breakfast Program
R27	AGR-14-10.553	Child Nutrition Programs: School Breakfast Program
R29	AGR-16-99.999	Child Nutrition Programs: Special Assistance for Free and Reduced-Price School Lunches
R30	AGR-16-99.999	Child Nutrition Programs: Special Assistance for Free and Reduced-Price School Lunches
R31	PHS-03-13.232	Maternal and Child Health and Crippled Children's Services: Maternal and Child Health Services: Basic Grants
R32	PHS-03-13.232	Maternal and Child Health and Crippled Children's Services: Maternal and Child Health Services: Basic Grants
R33	PHS-03-13.232	Maternal and Child Health and Crippled Children's Services: Maternal and Child Health Services: Basic Grants
R34	CSC-01-27.012	Intergovernmental Personnel Program: Basic Grants for Strengthening State and Local Personnel Administration
R35	EPA-02-66.419	Water Pollution Prevention and Control: Pollution Control Programs
R36	OHD-03-13.630	Developmental Disabilities: Basic Grants

TABLE 7. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- STUDENT ELEMENTS -

Formula Element	Related Program	
S1	OE-06-13.427	Educationally Deprived Children: State Operated Programs: Handicapped Children
S2	OE-08-13.431	Educationally Deprived Children: State Operated Programs: Neglected or Delinquent Children
S3	OE-13-13.477	Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activities
S4	OE-13-13.477	Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activities
S5	OE-13-13.477	Federally Affected Public Schools: Construction Aid Based on Increases in Federal Activities
	OE-15-13.478	Federally Affected Public Schools: Payments Due to Sudden and Substantial Increases in Attendance
S6	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
S7	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
S8	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
S9	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
S10	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
S11	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
S12	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
S13	COM-04-11.506	State Marine Schools: Student Subsistence Payments
S14	OE-16-13.534	Indian Education: Grants to Local Education Agencies
S15	OE-17-13.486	Strengthening State and Local Education Agencies: Basic Grants to States
S16	OE-33-13.548	Student Assistance: Aid for Certain Students Attending Institutions of Higher Education: Grants to States for State Student Incentives

Formula Element	Related Program	
S17	OE-37-99.999	School Library Resources, Textbooks, and Other Instructional Materials: Programs and Administration
S18	AGR-13-10.554	Child Nutrition Programs: Non-Food Assistance

TABLE 8. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- FIXED/EQUAL AMOUNT ELEMENTS -

Formula Element	Related Program	
F	AGR-04-10.203	Agricultural Experiment Stations: Support Grants
	AGR-05-10.500	Cooperative Agricultural Extension Work
	AGR-08-10.204	Rural Development and Small Farm Research
	AGR-08-10.418	Water and Waste Disposal Systems for Rural Areas
	COM-01-11.418	Coastal Zone Management: Development of Management Program
	DOD-01-12.315	Civil Defense: Contributions to States for Personnel and Administrative Expenses
	OE-01-13.400	Adult Education: Basic Grants
	OE-09-13.525	Emergency School Aid: Basic Grants to Local Education Agencies
	OE-10-13.526	Emergency School Aid: Pilot Programs or Projects
	OE-11-13.529	Emergency School Aid: Special Programs and Project Grants to Non-Profit Organizations
	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
	OE-17-13.486	Strengthening State and Local Education Agencies: Basic Grants to States
	OE-18-13.542	Strengthening State and Local Education Agencies: Comprehensive Educational Planning and Evaluation
	OE-19-13.519	Supplementary Education Centers and Services: Guidance, Counseling, and Testing
	OE-21-13.495	Vocational Education: Cooperative Programs
	OE-22-13.502	Vocational Education: Exemplary Programs and Projects: Basic Grants
	OE-23-13.502	Vocational Education: Exemplary Programs and Projects: Discretionary Grants
	OE-24-13.498	Vocational Education: Research and Training in Vocational Education: Basic Grants
	OE-25-13.498	Vocational Education: Research and Training in Vocational Education: Discretionary Grants

Formula Element	Related Program	
F	OE-26-13.499	Vocational Education: Special Programs for the Disadvantaged
	OE-27-13.500	Vocational Education: State Advisory Councils
	OE-28-13.493	Vocational Education: State Vocational Education Programs, Basic Grants
	OE-30-13.453	Colleges of Agriculture and Mechanic Arts (Land Grant Colleges
	OE-31-13.491	Community Service and Continuing Education Programs: Basic Grants
	OE-32-13.550	State Postsecondary Education Commissions: Comprehensive Statewide Planning
	OE-34-13.408	Public Library Programs: Construction
	OE-35-13.465	Public Library Programs: Interlibrary Cooperation
	OE-36-99.999	Public Library Programs: Library Services
	OE-39-13.483	Strengthening Instruction in Science, Mathematics, Languages, and Other Critical Subjects: Expansion or Improvement of Supervisory Services and Administration
	OHD-02-13.628	Child Abuse Neglect Prevention and Treatment: Assistance to States for Developing, Strengthening, and Conducting Programs
	INT-01-15.951	Water Resources Research: Assistance to State Institutions
	INT-02-15.605	Fish Restoration and Management
	INT-03-15.904	Historical Preservation: Comprehensive Planning and Survey Grants
	INT-04-15.904	Historical Preservation: Grants to States for Projects
	INT-06-15.400	Outdoor Recreation: Grants to States for Planning, Acquiring, and Developing Land and Water Areas and Facilities
	DOJ-03-99.999	Law Enforcement and Criminal Justice: Planning Grants
	DOL-07-17.230	Manpower Services: Migrant and Seasonal Farmworker Manpower Program (CETA-Title III)
	NFAH-01-45.007	Promotion of the Arts: Basic Grants to States
	PHS-02-13.211	Maternal and Child Health and Crippled Children's Services: Basic Grants
	PHS-03-13.232	Maternal and Child Health and Crippled Children's Services: Maternal and Child Health Services: Basic Grants

Formula Element	Related Program	
F	SRS-02-13.707	Child Welfare Services: Basic Grants to States
	DOT-25-20.004	State Boating Safety Program

TABLE 9. INDEX OF FORMULA GRANT-IN-AID PROGRAMS, BY FORMULA ELEMENT - FY 75

- CONSTRAINT ELEMENTS -

Formula Element	Related Program	
H	AGR-04-10.203	Agricultural Experiment Stations: Support Grants
	AGR-05-10.500	Cooperative Agricultural Extension Work
	AGR-14-10.553	Child Nutrition Programs: School Breakfast Program
	AGR-15-10.555	Child Nutrition Programs: School Lunch Food Assistance Programs
	CSA-01-49.002	Community Action: Community Action Agency Grants
	OE-01-13.400	Adult Education: Basic Grants
	OE-02-13.449	Education of the Handicapped: Basic Grantr
	OE-03-13.428	Educationally Deprived Children: Basic Grants to Local Education Agencies
	OE-06-13.427	Educationally Deprived Children: State Operated Programs: Handicapped Children
	OE-07-13.429	Educationally Deprived Children: State Operated Programs: Migratory Children
	OE-08-13.431	Educationally Deprived Children: State Operated Programs: Neglected or Delinquent Children
	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
	OE-32-13.550	State Postsecondary Education Commissions: Comprehensive Statewide Planning
	EPA-03-66.418	Water Pollution Prevention and Control: Waste Treatment Works Construction
	OHD-01-13.600	Headstart Program: Program Grants
	OHD-04-13.633	Older American Programs: Area Planning and Social Service Programs
	OHD-08-13.624	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilitation Services: Basic Grants to States
	DOL-07-17.230	Manpower Services: Migrant and Seasonal Farmworker Manpower Program (CETA-Title III)

Formula Element	Related Program	
H	PHS-02-13.211	Maternal and Child Health and Crippled Children's Services: Basic Grants
	PHS-03-13.232	Maternal and Child Health and Crippled Children's Services: Maternal and Child Health Services: Basic Grants
M	AGR-06-10.500	Extension Services in Disadvantaged Agricultural Extension Areas with Special Needs
	AGR-16-99.999	Child Nutrition Programs: Special Assistance for Free and Reduced-Price School Lunches
	CSC-01-27.012	Intergovernmental Personnel Program: Basic Grants for Strengthening State and Local Personnel Administration
	COM-02-11.407	Commercial Fisheries: Research and Development Basic Grants
	COM-03-11.506	State Marine Schools: Annual Payments
	OE-02-13.449	Education of the Handicapped: Basic Grants
	OE-04-13.511	Educationally Deprived Children: Special Grants
	OE-05-13.512	Educationally Deprived Children: Special Incentive Grants
	OE-14-13.478	Federally Affected Public Schools: Current Expense Aid Payments to Local Agencies
	OE-27-13.500	Vocational Education: State Advisory Councils
	EPA-01-99.999	Air Pollution Prevention and Control: Planning and Program Operation
	INT-01-15.951	Water Resources Research: Assistance to State Institutions
	INT-02-15.605	Fish Restoration and Management
	INT-03-15.904	Historical Preservation: Comprehensive Planning and Survey Grants
	INT-04-15.904	Historical Preservation: Grants to States for Projects
	INT-05-15.611	Hunter Safety Program
	INT-06-15.400	Outdoor Recreation: Grants to States for Planning, Acquiring, and Developing Land and Water Areas and Facilities
	INT-07-15.611	Wildlife Restoration
	SRS-04-13.771 13.772	Social Services: Providing Services and Personnel Training

Formula Element	Related Program	
M	DOT-01-99.999	Education and Training Programs for Highway Personnel
	DOT-20-99.999	Surveys, Planning, Research, and Development for Highway Programs
	DOT-25-20.004	State Boating Safety Program
	DOT-26-20.700	Natural Gas Pipeline Safety: Grants to Aid State Enforcement
N	AGR-03-10.661	Youth Conservation Corps: Projects for Employment of Youth on Non-Federal Public Lands
	AGR-12-10.550	Child Nutrition Programs: Commodity Distribution Differential Payments
	AGR-15-10.555	Child Nutrition Programs: School Lunch Food Assistance Programs
	AGR-18-10.556	Child Nutrition Programs: Special Milk Program
	CSC-01-27.012	Intergovernmental Personnel Program: Basic Grants for Strengthening State and Local Personnel Administration
	COM-02-11.407	Commercial Fisheries: Research and Development Basic Grants
	OE-09-13.525	Emergency School Aid: Basic Grants to Local Education Agencies
	OE-11-13.529	Emergency School Aid: Special Programs and Project Grants to Non-Profit Organizations
	OE-20-13.494	Vocational Education: Consumer and Homemaking Education
	OHD-03-13.630	Developmental Disabilities: Basic Grants
	OHD-04-13.633	Older American Programs: Area Planning and Social Service Programs
	OHD-05-13.635	Older American Programs: Nutrition Program for the Elderly
	OHD-06-13.633	Older American Programs: Planning, Coordination, Evaluation, and Administration
	OHD-07-13.625	Vocational Rehabilitation: Services for Social Security Disability Beneficiaries
	OHD-08-13.624	Vocational Rehabilitation and Other Rehabilitation Services: Vocational Rehabilitation Services: Basic Grants to States
	INT-02-15.605	Fish Restoration and Management

Formula Element	Related Program	
N	INT-05-15.611	Hunter Safety Program
	INT-07-15.611	Wildlife Restoration
	DOJ-01-16.516	Juvenile Justice and Delinquency Prevention: State and Local Programs, Planning and Administration
	DOL-09-17.235	Older Americans Program: Community Service Employment
	PHS-01-13.257	Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation: Basic Grants
	PHS-04-13.269	Drug Abuse Prevention and Treatment: Basic Grants
	PHS-05-13.240	Community Mental Health Centers: Construction
	DOT-03-20.600	Highway Safety: Basic Grants
	DOT-07-99.999	Highway Safety: Program for the Elimination of Roadside Obstacles
	DOT-08-99.999	Highway Safety: Projects for High-Hazard Locations
	DOT-09-99.999	Highway Safety: Safer Roads Demonstration Program
	DOT-12-99.999	Highways: Federal-Aid Primary Systems in Rural Areas
	DOT-13-99.999	Highways: Federal-Aid Secondary System in Rural Areas
	DOT-14-99.999	Highways: Federal-Aid Urban Systems
	DOT-16-20.205	Highways: Interstate System
	DOT-21-99.999	Transportation Planning in Urban Areas

PART 3. CLASSIFICATION AND ANALYSIS OF FORMULA PROGRAMS BY DISTRIBUTIONAL OBJECTIVE AND TYPE

SECTION 3-1. INTRODUCTION

In attempting to evaluate and improve the effectiveness of formula grants-in-aid, the identification of distributional objectives and formula design characteristics becomes critical. Distributional objectives can be viewed as having two components: program objectives and formula objectives. While identification of these formula or program attributes is usually possible, the process can be frustrating and most imprecise in the end.

A number of classification schemes have been developed or discussed which address these three areas. ACIR's recent work which classified 442 categorical programs by purpose (e.g., supportive, stimulative, capacity building) addresses the issue of program objectives. Mushkin and Cotton, ACIR, JWK and others have discussed formula objectives in terms of measures of need, equity (political equity and capacity equalization), program effort, and tax effort. Finally, discussions of formula design characteristics typically focus on aspects such as closed vs. open-ended, match vs. non-match, minimums, maximums, etc.

The subject--although somewhat complex and obscure--is, nevertheless, at the very heart of the debate regarding whether the grant-in-aid system does work efficiently to distribute money according to the objectives of specific programs. While theoretical discussions have been advanced by such authors as Mushkin and Cotton, ACIR, and George Break, and applications of these discussions have been carried out for selected programs, such work has stopped short of reviewing the entire grant-in-aid picture in terms of these three levels of classification. What is needed now is to distribute actual programs across these classifications and to evaluate whether program objectives, formula objectives, and formula design "mesh"--whether formula objectives and design are consistent with explicit or implicit program objectives. Once grant-in-aid programs have been analyzed across these three dimensions--and only then--can one observe relationships such as whether programs which intend to stimulate new activity utilize formulas similar to those of programs which intend to support existing activity, and can ask whether they should or should not be similar.

The following sections review selected classification schemes for formula programs and demonstrate the application of such schemes for programs which contain income components. A conceptual framework for a three dimensional analysis is presented in Section 3-5. This framework will be further tested and applied during the remainder of the research effort.

SECTION 3-2. CLASSIFICATION OF FORMULA PROGRAMS BY PROGRAM OBJECTIVE

There have been numerous attempts to identify objectives of the federal grant-in-aid system and of individual programs. Some of these attempts start from the overall perspective of the federal system, while others have taken a state-local and special interest perspective. The only recent work that was applied to all programs is that of ACIR--in the Catalog of Federal Grant-in-Aid Programs. For this reason, ACIR's scheme for classifying categorical grants according to Congressional purpose (program objective) is utilized in the following review. The categories developed for this scheme are as follows:[1]

A. Support - a grant is supportive if a cut in Federal aid is unlikely to weaken support for the aided activity from state or local funds

B. Stimulative - a grant is stimulative if in its absence the state or local government would have inadequate incentive to perform the aided activity or would reduce its activity

(1) Stimulative (research)
(2) Stimulative (demonstration)
(3) Stimulative (facilities construction)
(4) Stimulative (operations)

C. Capacity building - grants designed to improve general government planning, management, etc.

D. Training - grants for long-term training

E. Complementary grants - supplementals to other grants

F. National programs - grants to states and localities to compensate them for administering and supervising essentially national programs

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[1] ACIR, A Catalog of Federal Grant-in-Aid Programs to State and Local Governments: Grants Funded FY 1975, p. 3-5.

In its Catalog, ACIR identified the chief purpose of each program included in the Catalog. The primary distinction was made between stimulative and supportive grants. For the purposes of this review, the focus will be on four of the above categories: support, stimulative, capacity building, and national programs. These represent nearly all (98%) formula based categorical grant-in-aid programs--support (34%), stimulative (13%); stimulative/support (21%), capacity building (5%); and national program (26%).[1] On this basis, the following Table (3-2): 1 sets forth ACIR's classification of programs containing income formula elements.

TABLE (3-2): 1. CLASSIFICATION OF FORMULAS CONTAINING INCOME ELEMENTS, BY PROGRAM OBJECTIVES

Supportive	Stimulative	Supportive/ Stimulative	Capacity Building	National Program
AGR-11	AGR-09	CSA-01	OE-27	AGR-17
OE-20	OE-04	OE-03	(3%)	-19
-24*	-05	OHD-03		DOL-01
-28	-25	PHS-01		-02
-38*	-26	SRS-05		-03
OHD-01*	(15%)	(16%)		-04
-08				-08
PHS-02				(22%)
-03				
-04				
-05				
SRS-02				
-06				
WRC-01*				
(44%)				

*Presently supportive, although initially intended to be stimulative.

The largest group of income element programs is found in the supportive category (44%). The next largest group is the supportive/stimulative grouping which represents programs intended to be part supportive and part stimulative. Compared to all 147 formula based programs income element formula programs tend to be more supportive (44% vs. 34%) and less stimulative/supportive

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[1] ACIR, Categorical Grants: Their Role and Design.

(16% vs. 21%), while generally aligned with the total in terms of the proportion stimulative, national program oriented, and capacity building.

SECTION 3-3. CLASSIFICATION OF FORMULA PROGRAMS BY FORMULA OBJECTIVES

In Section 2-3, grant-in-aid formula elements were described in some detail, and throughout this paper we have referred to formula distributional objectives in the context of need, equity, program effort, and tax effort. This section will provide a more detailed definition of what is meant by these concepts, indicate which formula elements are actually used to measure these concepts, discuss how they are used in formula algorithms, and present a classification of programs by these concepts. The definitions used here are primarily based on work done by Mushkin and Cotton, JWK, and ACIR.[1]

Four general concepts are typically considered in discussions regarding distributional criteria used in allocating federal funds. These concepts, as set forth by JWK International, are:

> "1. The ability-to-pay concept which takes into consideration the fiscal capacity of a state to produce the desired service out of its own sources of revenue. This is some measure of the revenue and tax base of the state such as income as a base for income taxes and total sales as a base for sales taxes.
>
> 2. The relative need of the population for specific public services. For example, the state with a larger percentage of population in the school-age group has greater need for educational services.
>
> 3. The tax effort of the state government which is the willingness of this government to raise revenue from its own constituency. The fiscal capacity of a state may be relatively high, but if the government does not take advantage of its fiscal capacity, its actual revenue may be relatively small.

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[1] Mushkin, Selma J. and Cotton, John F., Sharing Federal Funds for State and Local Needs: Grants-in-Aid and PPB Systems (New York: Praeger Publishers, 1969). JWK International Corporation, Conceptual Framework for Analysis of the Federal Medical Assistance Percentage Formula (Annandale, Virginia: 1976). ACIR, Categorical Grants: Their Role and Design (Draft).

4. The program-effort which represents the state government's willingness to expand the program for which the Federal money is granted."[1]

In addition to these concepts, ACIR has considered another "allocational principle"--that of fair share (or political equity).[2] This concept is to reflect equal distributions per state or per capita (i.e., total population) which are intended to establish distributional equity or equality.

In determining a classification scheme for the purposes of this report, the four categories mentioned above were selected: ability-to-pay or fiscal capacity, need, tax effort, and program effort. A separate category for fair share or political equity was not created since it would be difficult to distinguish between total population used as a measure of need versus a measure of political equity and also it would be difficult to determine whether equal amounts per state were being used to create political equity or to provide a basic minimum administrative support level or overhead amount which would be required by any state program regardless of the extent of need.

For the purposes of this analysis, formula objectives have been determined on the basis of the apparent effect of the elements used in the formula construction. In general, measures of need such as proportional population, number of students, number of unemployed, acres of woodland, or road mileage can be readily interpreted. When the effect of using per capita income in an inverse ratio is to redistribute federal money in accordance with fiscal capacity, then we have assumed that per capita income was, in fact, intended to be used as a measure of fiscal capacity. However, some formula elements are difficult to interpret or, at least, could be interpreted differently by equally competent analysis. We have attempted to indicate areas where such ambiguity exists.

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[1] JWK International Corporation, p. III-6.

[2] ACIR, Categorical Grants: Their Role and Design, p. III-9.

Elements Used to Operationalize Formula Objectives

Need

Generally, measures of population, numbers of students, land area, and many of those formula elements classified as "other" are used to operationalize the concept of need. Income measures which reflect low income or poverty status are also generally considered to be measures of need. Measures of need are almost always used in proportional formulas where the state measure of need is related to a U.S. measure or a "sum of the states" measure. The resulting ratio determines what proportion of a fixed total U.S. allotment is allocated to each state. However, measures of need may also be used in combination with measures of program effort or fiscal capacity--these types of formulas will be discussed under program effort and fiscal capacity.

Program Effort

Program effort can be indicated in several ways, the most frequently used measures being program costs or program expenditures. (In our classification of formula elements these are in the expenditure category.) Effort measures may be expressed as total program costs or expenditures or they may be expressed as service costs or expenditures per recipient or per capita. These formulas are reimbursement formulas. If the formula is of the latter type, determining costs per recipient or costs per eligible population the formula may be thought of as including a measure of need since, even with technically open-ended reimbursement formulas of this type, there is an upper limit to program expenditures which is defined by the size of the eligible population.

As with measures of need, program effort can also be used in a formula which determines a state to U.S. ratio in order to allocate a fixed total U.S. allotment among the states--i.e., in a proportional entitlement formula. Frequently such a formula also includes measures of need.

Fiscal Capacity

Fiscal capacity is represented in formulas as an inverse measure of state to U.S. per capita personal income. Although other measures of fiscal capacity have been discussed as being more accurate and equitable, they have generally not been used in any of the grant-in-aid formulas. The inverse relationship simply means that those states with a higher per capita income will receive a lower per capita allotment and vice versa. The intent, of course, is to assist states having low fiscal capacity in providing a minimum level of services which they might otherwise be unable to provide.

Measures of fiscal capacity are always used to modify measures of need or program effort--fiscal capcity is never used alone. In reimbursement formulas fiscal capacity has been used to create a variable match ratio so that states with a higher per capita income must assume a larger share of program costs than states with a lower per capita income.

When used in proportional allotment distributions, the fiscal capacity measures modify what would otherwise be a direct relationship between need and/or effort and the allotment. That is, if one state had twice the number of people in need of services as another state, it would receive twice the allotment if the formula were based on need alone. The per recipient or per person in need of services amount would be equal for both states. However, if a fiscal capacity measure is introduced, the first state will no longer receive twice the allotment of the second. If the first state has a higher per capita income, it will receive a lower total allotment than its original amount and also a lower per recipient or per person in need of services allotment than that of the second state.

The effectiveness of a fiscal capacity measure depends on how it is used in the formula and also on the number and type of other formula elements used, the weighting given to the various formula elements, and other formula design characteristics such as whether minima, maxima, or hold-harmless constraints are used. The considerations will be dealt with in greater depth in the following Part 4, Classification and Redistributive Efforts of Capacity Equalizing Formulas.

Classification of Income Element Formulas

Table (3-3): 1, following, sets forth a classification of income element formulas by formula distributional objective. The four categories described above have been utilized in combination with one another to portray the six different schemes prevalent with income element formulas--five of which have need as a partial or entire distributional objective.

Over half (56%) of all income element formulas distribute funds on the basis of need and fiscal capacity, and over one-quarter (28%) of all formulas distribute funds on the basis of need alone. The majority of programs distributing funds on the basis of need and fiscal capacity are administered by the Office of Education or Public Health Service, while need programs are primarily administered by the Department of Labor or Agriculture. Per capita income (I1) is the principal element used to measure fiscal capacity in need/fiscal capacity programs, whereas an assortment of need measures are used in these programs--primarily population elements, such as total population (P1), number of children under 21 (P7), population 15-19 (P31), etc. Measures used in formulas distributing funds on the basis of need alone are either population or income elements, such as unemployed population (P15), number of public assistance recipients (P40), adults in low income families (I2), children living in families below poverty level (I11), etc. Overall, 29 different elements are used to measure need in the five need categories.

TABLE (3-3): 1. CLASSIFICATION OF INCOME ELEMENT
FORMULAS BY FORMULA OBJECTIVE

Formula Objective	Formula ID #	Elements Used to Operationalize Concepts of: Need	Tax Effort	Program Effort	Fiscal Capacity
Need	AGR-17	I8			
	AGR-19	I9			
	CSA-01	P40, P15, I11			
	OHD-01	P40, I11			
	DOL-01	P15, I2			
	DOL-02	P15, I2			
	DOL-03	P15, I2			
	DOL-04	P15, I2			
	DOL-08	P15, I2			
Need/Tax Effort	OE-05	P28	I3, E23		
Need/Program Effort	OE-03	I4, P26, P27		E21	
	OE-04	I5		E22	
Need/Fiscal Capacity	AGR-09	P39			I7
	AGR-11	P2			I7
	OE-20	P31, P32, P33			I1
	OE-24	P31, P32, P33			I1
	OE-25	P31, P32, P33			I1
	OE-26	P31, P32, P33			I1
	OE-27	P31, P32, P33			I1
	OE-28	P31, P32, P33			I1
	OE-38	P36			I6
	OHD-03	R36, P1			I1
	OHD-08	P1			I1
	PHS-01	P1			I1
	PHS-02	P7, P8, P9			I1
	PHS-03	R31, R32, R33			I1
	PHS-04	P1			I1
	PHS-05	P1			I1
	SRS-02	P7			I1
	WRC-01	P1, L1			I1
Need/Program Effort/Fiscal Capacity	SRS-06	P41, P42, P43		E66, 67, 68, 75	I1
Program Effort/Fiscal Capacity	SRS-05			E58-64	

SECTION 3-4. CLASSIFICATION OF FORMULA PROGRAMS BY FORMULA DESIGN CHARACTERISTICS

Existing classification schemes for program objectives and formula objectives were found to be adequate for the purposes of this review. However, a thorough review of the literature revealed no such scheme for formula design characteristics. While most authors distinguish between matching grants and non-matching grants (sometimes called allotment, allocation, or entitlement grants) this classification neither adequately describes all formulas nor does it adequately capture other very relevant dimensions of the variety of formula constructions. And while the other design characteristics mentioned above have been discussed, there has been no successful effort to categorize programs within a typology which distinguishes bewteen discrete categories. Hence, work in this area is rather exploratory at this point and the scheme used in the following section should be considered as only an initial attempt to illustrate the potential of design classification.

Formula Design Characteristics

Matching vs. Non-Matching

Some grants require recipients to share in program costs through non-Federal matching. This means that for a state to receive $1 in assistance, it must spend, for example, $1.00 in local money--producing a 50% federal share and 50% state share. The match may be fixed versus variable--that is, all states may be required to share 50% of program costs or the match rate may vary from state to state according to certain criteria, such as fiscal capacity.

Grants not requiring a match are often termed entitlement grants. Entitlement grants have been defined as grants which distribute a fixed sum of money to recipients, often in proportion to state-to-federal ratios indicating relative need, effort, or capacity. Such grants do not require a match so that eligible recipients (usually states) are automatically entitled to the sums determined by the formula. Because there is a fixed sum of money distributed among recipients, higher than average amounts for some states mean lower than average amounts for others--on the basis of such criteria as "need" or "capacity."

Closed vs. Open-Ended Grants

Since entitlement grants, by definition distribute a fixed sum of money they are closed-ended grants. However, matching grants may be either open or closed-ended. An open-ended grant does not have a pre-determined ceiling on federal expenditures--federal expenditures will be determined by local expenditures. A closed-ended grant does impose a federal ceiling on expenditures. A closed-ended matching grant may resemble an entitlement grant in that a pre-determined amount of money is distributed in proportion to one or several state-to-federal ratios measuring need, effort, or capacity.

Proportional Distribution Grants vs. Reimbursement Grants

The most common formula is that which distributes money in proportion to one or several state-to-federal ratios measuring need, effort, or capacity. Usually this is a direct proportional relationship, meaning that as a state's need or effort increases in relation to other states, it will receive more money. However, where the program objective is capacity equalization, an inverse proportional relationship is used, so that as a state's ability to finance its own programs increases in relation to other states, its allotment per unit of program need decreases.

An alternative type of formula is that which reimburses state and/or local expenditures. This can take a number of forms. One extreme is the formula which simply reimburses all or some percent of local program expenditures. Alternatively, the formula may provide for a fixed reimbursement rate per unit of need or unit of expenditure--for example, per diem hospital rates for veterans or average state school expenditures multiplied by the number of school children in certain categories, etc. Finally, some reimbursement formulas establish a matching ratio, determining the level at which state expenditures will be reimbursed.

If a reimbursement grant is closed-ended, it may appropriately be classified as an entitlement grant since the assumption is that states will be given allotments in relation to their state-to-local U.S. expenditure ratio. However, reimbursement formulas which are open-ended and do not require a match constitute a separate category distinct from the match vs. entitlement dichotomy.

Formula Design Classification Scheme

The following Table (3-4): 1 presents a scheme for classifying formulas by formula design characteristic.

TABLE (3-4): 1. CLASSIFICATION SCHEME--BY FORMULA DESIGN CHARACTERISTIC

Match/Non-Match	
A. Open-Ended	B. Closed-Ended
1. Reimbursement (% Share or Rate) a. Fixed b. Variable	1. Reimbursement (% Share or Rate) a. Fixed b. Variable
	2. Proportional Distribution a. Direct b. Inverse

This chart attempts to simplify and clarify what is in fact a fairly complex and ambiguous situation--which becomes most apparent when one attempts to classify individual formulas into appropriate categories. Although decisions regarding borderline or "hybrid" formulas can be made case by case, the necessity of making such decisions results in categories that are less discrete.

Nevertheless, the above categorization seems worth pursuing since: (1) many programs do fall readily into discrete categories, and (2) the general categorization should facilitate an overview of formula design characteristics in relation to broader distributional objectives. Once definitions are determined and categorizations within this broad typology are completed, it may be necessary to look in more detail at sub-categories which could also affect the relationship between formula design and distributional objectives. For example, reimbursement programs could be further subdivided into programs which provide a cost reimbursement share (e.g., 50%-50%) and programs providing a reimbursement rate per unit of program need (e.g., $8.50 per patient-day)--both of which could be fixed or variable (e.g., based on a measure of capacity).

Classification of Income Element Formulas

Although the above classification scheme could be more detailed, it does provide a framework for categorizing formulas by formula design characteristic. Table (3-4): 2 following, presents a categorization of all formula based programs which use income elements. As it can be seen, the vast majority of programs fall into the category of proportional distribution formulas--nearly equally split between match and non-match formulas. At the same time, the majority of federal funds are distributed in the category of open-ended matching formulas--which includes Medicaid (SRS-05) and AFDC (SRS-06). Most capacity equalizing formulas are matching formulas--falling primarily in the category of inverse proportional distribution formulas.

TABLE (3-4): 2. CLASSIFICATION OF INCOME ELEMENT FORMULAS BY FORMULA DESIGN CHARACTERISTIC

	A. Open-Ended	B. Closed-Ended
I. Match	1. Reimbursement (% Share or Rate) a. Fixed b. Variable: SRS-05* SRS-06*	1. Reimbursement (% Share or Rate) a. Fixed b. Variable 2. Proportional Distribution a. Direct: CSA-01 b. Inverse: AGR-09* OHD-03* OE-20* OHD-08* OE-24* PHS-02* OE-25* PHS-03* OE-28* PHS-05* OE-38* SRS-02* WRC-01*
II. Non-Match	1. Reimbursement (% Share or Rate) a. Fixed b. Variable	1. Reimbursement (% Share or Rate) a. Fixed b. Variable: OE-03 OE-04 OE-05 2. Proportional a. Direct: AGR-17 DOL-02 AGR-19 DOL-03 DOL-01 DOL-04 DOL-08 b. Inverse: AGR-11* PHS-01* OE-26* PHS-04* OE-27*

*Capacity Equalizing Formulas.

SECTION 3-5. A CONCEPTUAL FRAMEWORK FOR THREE-DIMENSIONAL ANALYSIS

In order to complete an analysis of the consistency of distributional objectives (program and formula) and formula design, a three dimensional framework is necessary. The following Table (3-5): 1 presents such a framework applied to income element formulas. The utility of such a framework for formula analysis will be assessed during the remainder of our study effort.

TABLE (3-5): 1. CONCEPTUAL FRAMEWORK FOR A THREE-DIMENSIONAL FORMULA ANALYSIS

Formula Design	Distributional Objective											
	Supportive			Stimulative			Support/Stimulative				Capacity Building	National Program
	Need	Need/ Capacity	Need/ Prog. Effort/ Capacity	Need/Tax Effort	Need/ Prog. Effort	Need/ Capacity	Need	Need/ Prog. Effort	Need/ Capacity	Need/ Prog. Effort Capacity	Need/ Capacity	Need
I. Match												
A. Open-Ended												
1. Reimbursement												
a. Fixed	--	--	--	--	--	--	--	--	--	--	--	--
b. Variable	--	--	SRS-06	--	--	--	--	--	--	SRS-05	--	--
B. Closed-Ended												
1. Reimbursement												
a. Fixed	--	--	--	--	--	--	--	--	--	--	--	--
b. Variable	--	--	--	--	--	--	--	--	--	--	--	--
2. Proportional												
a. Direct	OHD-01	--	--	--	--	--	CSA-01	--	--	--	--	--
b. Inverse	--	OE-20 OE-24 OE-28 OE-38 OHD-08 PHS-02 PHS-03 PHS-05 SRS-02 WRC-01	--	--	--	AGR-09 OE-25	--	--	OHD-03	--	--	--
II. Non-Match												
A. Open-Ended												
1. Reimbursement												
a. Fixed	--	--	--	--	--	--	--	--	--	--	--	--
b. Variable	--	--	--	--	--	--	--	--	--	--	--	--
B. Closed-Ended												
1. Reimbursement												
a. Fixed	--	--	--	--	--	--	--	--	--	--	--	--
b. Variable	--	--	--	OE-05	OE-04	--	--	OE-03	--	--	--	--
2. Proportional												
a. Direct	--	--	--	--	--	--	--	--	--	--	--	AGR-17 AGR-19 DOL-01 DOL-02 DOL-03 DOL-04 DOL-08
b. Inverse	--	PHS-04	--	--	--	AGR-11	--	--	PHS-01	--	OE-27	--

*Formula objective columns without income formulas have been eliminated for this presentation, however, these additional columns should be considered in the review process.